

PLANTÆ LINDHEIMERIANÆ;

Prof. G. B. Schott

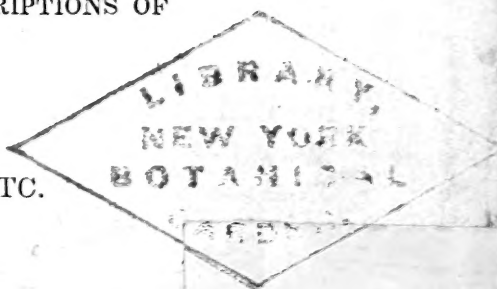
AN ENUMERATION OF

G. Engelmann

F. LINDHEIMER'S COLLECTION OF TEXAN PLANTS,

WITH REMARKS, AND DESCRIPTIONS OF

NEW SPECIES, ETC.



BY GEORGE ENGELMANN AND ASA GRAY.

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PLANTÆ LINDHEIMERIANÆ.

MR. LINDHEIMER's plan for exploring the botany of Texas, and preparing specimens of dried plants for distribution, was announced in Silliman's Journal for July, 1843. The collection of that season, owing to various misfortunes, having been much smaller than was anticipated, it was thought best to defer its distribution until that for the year 1844 should come to hand. A part of the second collection was lost in the course of transmission to St. Louis; those which were received in sufficient quantity for distribution extend the number to 318. Mr. Lindheimer is now entering upon an unexplored field west of the Colorado River, and we may confidently expect that a rich harvest of peculiar plants will reward his efforts during the present season. This collection will be assorted and distributed without delay, and our account of them duly published in the pages of this journal.

The collection of 1843 was made on Galveston Island, around Houston, on the Brazos, &c. The series commences with some species of *RANUNCULUS*, allied to *R. pusillus*, which, having been long since distinguished by Dr. Engelmann, and communicated to various botanists under the following names, the characters as assigned by him are here given.

1. *RANUNCULUS TEXENSIS* (*Engel. MSS.*): caule erecto ramosissimo basi hispido; foliis petiolatis, inferioribus ovatis subcordatis denticulatis, superioribus lineari-lanceolatis, basi petiolorum membranaceo-dilatata bracteisque ciliatis; petalis 5 oblongis sepala ovata obtusa longe superantibus; staminibus plurimis; carpellis subglobosis acutis minutim tuberculis in capitulum globosum congestis. — Margin of ponds, &c. near

Houston. April. A span to a foot high, with conspicuous bright yellow petals.

2. *R. TRACHYSPERMUS* (*Engel. MSS.*): caule ramoso glabro; foliis petiolatis, inferioribus plerumque orbiculato-ovatis obtusis subintegris, superioribus lanceolatis lineari-lanceolatisve denticulatis, basi petiolorum membranaceo-dilatata bracteisque subciliatis; sepalis 3-4 ovatis reflexis petala 3-5 minima lineari-spathulata superantibus; staminibus 5-10; carpellis compressis obtusis undique tuberculosi in capitulum oblongum seu cylindricum congestis. — Margin of ponds near Houston, &c. April, May.

3. *R. TRACHYSPERMUS*, β *ANGUSTIFOLIUS* (*Engel. MSS.*): foliis omnibus lanceolatis lineari-lanceolatisve; — and γ ? (an spec.?) *LINDHEIMERI* (*Engel. MSS.*): foliis inferioribus ovatis; sepalis 3-5 ovatis obtusis patentibus petala 3 lineari-spathulata æquantibus; carpellis compressis obtusiusculis tuberculosi in capitulum globosum congestis. — Near Houston, &c. but not growing together with No. 2.

4. *CLEMATIS CYLINDRICA*, *Sims.* A narrow-leaved variety; the herbaceous stem beginning to flower in April, when only a foot or so in height. Houston.

5. *C. RETICULATA*, *Walt.* Houston. June.

6. *ANEMONE CAROLINIANA*, *Walt.* Prairies, Houston. February, March.

7. *COCCULUS CAROLINUS*, *DC.* Houston. June.

8. *STREPTANTHUS HYACINTHOIDES*, *Hook. Bot. Mag.* t. 3516. West of the Brazos. July.

9. *CRISTATILLA EROSA*, *Nutt.*; *Torr. & Gr. Fl.* I. p. 123. Sandy prairies on the Brazos. August.

10. *CLEOMELLA MEXICANA*, *DC.* High prairies west of the Houston. April, August.

11. *POLYGALA LEPTOCAULIS*, *Torr. & Gr. Fl.* I. p. 130. West of the Brazos. August. — More or less branched. Capsules ovate, with glands along the dissepiment on the face of the valves.

12. *P. INCARNATA*, *Linn.* Houston. April.



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13. *KRAMERIA LANCEOLATA*, Torr. in *Ann. Lyc. New York*, II. p. 168. The root of *Krameria lanceolata* is ligneous, 2 to 3 lines thick, and very long, of a dark red color, and has the same chemical and medicinal properties as the South American *Ratanha*, (root of *K. triandra*, R. & P.) As the plant appears to be common in some parts of Texas, it might become valuable for collection and export.¹

14. *DROSERA BREVIFOLIA*, Pursh. Galveston Island. April.

15. *HELIANTHEMUM CAPITATUM*, Nutt. (ex Torr. & Gr. Fl. I. p. 151.) *H. polifolium*, Torr. & Gr. l. c., which name is preoccupied in the genus. The clusters are seldom capitate. May.

16. *LECHEA DRUMMONDII*, Torr. & Gr. Fl. I. p. 154. With the preceding.

17. *HYPERICUM GYMANTHUM* (n. sp.): annuum, caule simplici vel superne ramoso erecto quadrangulari; foliis e basi cordata ovatis ovati-oblongisve amplexicaulibus 5-7-nerviis pellucido-punctatis; cyma dichotoma pedunculata strictiuscula laxiflora aphylla, nempe foliis floralibus in bracteis parvis lanceolato-subulatis diminutis; floribus pedicellatis; sepalis lanceolatis acutis petala superantibus; staminibus 10-12;

¹ Professor A. Braun, after examining the flowers of species of this genus, has suggested that the natural affinity of *Krameria* is with *Leguminosæ*, rather than with *Polygalaceæ*. And, indeed, at least in this species, the two lateral glandulous petals cover in æstivation the stamens; they cannot therefore belong to an interior circle, as Benthams supposes. The ovary is one-carpellary (against the type of *Polygalaceæ*) and irregularly one-sided, like the ovary of *Leguminosæ*; it is imperfectly bilocular, by the inflection of the placenta, as in some *Leguminosæ*; but in both cases are the cells always side by side; on the contrary, in *Polygalaceæ* one is before the other. *Krameria* may, then, be considered a pentandrous *Leguminosa*, where one or two stamens are abortive. In *K. lanceolata*, it is the lowest stamen, opposite the three connected petals, which is wanting; but, in some flowers, a sterile filament occupies this place; it corresponds with the free 10th stamen of most papilionaceous flowers, as the four others, which are united in *K. lanceolata*, are analogous to the tube of nine connected filaments. The lateral sessile petals correspond with the carina, and the three others, whose claws are connected, with the alæ and carina; the five sepals alternate with them, as the stamens alternate with the petals. The fruit resembles somewhat the indehiscent spiny legume of an *Onobrychis*; and, in all the specimens we have examined, it is one-seeded when ripe. Engel. MSS.



capsula ovato-conica calycem vix superante uniloculari; seminibus flavis longitudinaliter costatis. — Clayey soil in pine woods near Houston. June. Also in Louisiana, Arkansas, &c. not uncommon. This is the plant mentioned in *Torr. & Gr. Fl. N. Amer.* under *H. mutilum*. It appears so different from the ordinary form of that species, that we are obliged to separate it. It varies from 6 to 20 inches in height.

18. *PARONYCHIA DRUMMONDII*, *Torr. & Gr. Fl. I.* p. 170. July.

19. *P. SETACEA*, *Torr. & Gr. l. c.* West of the Brazos, with the preceding, &c.

20. *SILENE ANTIRRHINA*, *Linn.* var. *SUBGLABRA*; and

21. var. *LÆVIGATA*; the leaves smooth, and with smooth margins. Galveston.

22. *LINUM BERENDIERI*, *Hook. Bot. Mag.* t. 3480. Sandy downs of Galveston Island. April, May. Perennial? No doubt distinct from *L. rigidum*. Styles connate above the middle. The name should, if we mistake not, be *L. Berlandieri*.

23. *XANTHOXYLUM CAROLINIANUM*, *Lam.* "*Pepper-tree, Toothache-tree.*" March.

24. *SIDA LINDHEIMERI* (*n. sp.*): annua? puberula; caule erecto ramoso; foliis linearibus vel oblongo-linearibus serratis basi subcordatis; stipulis lanceolato-setaceis petiolum subæquantibus; pedunculis folium demum æquantibus; carpellis 10–12 reticulato-rugosis, apice breviter birostratis extus pubescentibus et angulo interno in dentem subuncinatum brevem introrsum productis. — Prairies east of the Brazos. June to August. (Also collected in Louisiana by Dr. Carpenter.) About 2 feet high; the leaves 1–2 inches long, and 2–4 lines wide. Peduncles articulated about three-fourths of an inch below the fruit. Flowers (the yellow corolla an inch or more in diameter) and fruit larger than in *S. rhombifolia*, from which the carpels of the present species differ by their shorter and blunter horns, reticulated sides, and by the tooth project-

ing from the internal angle at the summit. *S. Elliottii* has narrower leaves, shorter peduncles, and about 9 orbicular carpels, which are only slightly bimucronate.

25. *MALVAVISCUS DRUMMONDII*, *Torr. & Gr. Fl. I.* p. 230. Wet places, Houston. August. Leaves 4 or 5 inches in breadth. This proves to be a very ornamental plant in cultivation.

26. *VITIS BIPINNATA*, *Torr. & Gr.* Prairies, Houston. June.

27. *VICIA LUDOVICIANA*, *Nutt.* Galveston and Houston. April.

28. *VIGNA GLABRA*. Savi? Thickets, Houston, &c. June, July. — The plant is hirsute, but the leaves are almost glabrous when old; the flowers hardly larger than those of the garden bean; the vexillum pale yellow, the carina deep yellow. Legume compressed, somewhat torulose, black, hirsute with whitish hairs; the seed black, with a white hilum. The leaflets are broadly oval; but there is a variety β *ANGUSTIFOLIA*, which has lanceolate or linear-lanceolate leaves. Near brackish water on the coast of Galveston Bay. July.

29. *RHYNCHOSIA MINIMA*, *DC.*; *Torr. & Gr. Fl. I.* p. 687. Houston. September.

30. *R. MENISPERMOIDEA*, *DC.* With the preceding, in hard, clayey soil.

31. *DAUBENTONIA LONGIFOLIA*, *DC.* Houston. August.

32. *TEPHROSIA ONOBRYCHOIDES*, *Nutt.* A variety with silvery pubescence, and somewhat persistent stipules. Flowers white, soon turning to pale scarlet; the vexillum green in the middle. Prairies from Houston to the Brazos. April, August.

33. *T. VIRGINIANA*, *Pers.*, and

34. *INDIGOFERA LEPTOSEPALA*, *Nutt.* Houston and the Brazos. June, July.

35. *PSORALEA RHOMBIFOLIA*, *Torr. & Gr. Fl. I.* p. 303. Sandy places, Galveston Island, May. (Also collected by Dr.

Wright.) Stems diffuse, decumbent, from a filiform, often tuberiferous root. Leaflets of the lower leaves orbicular, of the upper rhombic-ovate and mostly acute. Peduncles in our specimens commonly shorter than the leaves. Legume membranous, suborbicular, rostrate, *transversely dehiscent*; the upper part strigose-pubescent, the lower glabrous and somewhat rugose. Seeds orbicular, compressed. The singular transverse dehiscence of the pod appears to confirm the opinion that *Psoralea* belongs to the tribe *Hedysarææ*.

36. *P. OBTUSILOBA*, Torr. & Gr. l. c. Dry prairies east of the Brazos, flowering early in the season. Legumes glandular. The allied, but distinct, *P. floribunda* is wrongly described as "canescent but not glandular," whereas the plant is generally glandular, often very much so.

37. *AMORPHA PANICULATA*, Torr. & Gr. Fl. I. p. 306. Thickets, Galveston Bay, and west of the Brazos. June, July. A stately plant, 6 to 9 feet high, the long spikes clustered in ample panicles.

38. *A. GLABRA*, Desf.; DC. prodr. 2. p. 256. Wet prairies, Houston, &c.

39. *DALEA AUREA*, Nutt. West of the Brazos. June to August.

40. *PETALOSTEMON OBOVATUM*, Torr. & Gr. Fl. I. p. 310. Brazos. August.

41. *P. PHLEOIDES* β *MICROPHYLLUM*, Torr. & Gr. l. c. Sandy elevations in the prairies west of the Brazos. July.

42. *P. VIOLACEUM*, Michx.: a pubescent variety.

43. *P. MULTIFLORUM*, Nutt. On the Brazos. August.

44. *TRIFOLIUM REFLEXUM*, Linn. Galveston. May.

45. *ASTRAGALUS NUTTALLIANUS* β *TRICHOCARPUS*, Torr. & Gr. Fl. I. p. 334. Coast of Galveston Island, on soil composed of fragments of shells; while *A. Nuttallianus* is found in prairies in the interior of the island. The present variety, if such it be, has rather shorter as well as hairy pods, with usually 7–8 seeds in each cell, while in the true *A. Nuttallianus* there are commonly 10–12.

46. *A. LEPTOCARPUS*, *Torr. & Gr. l. c.* April, with the preceding.

47. *MIMOSA STRIGILLOSA*, *Torr. & Gr. Fl. I. p. 399.* Tetramerous, octandrous. Hard clayey soil. April, June. — We have this plant in cultivation. The foliage is nearly as sensitive to the touch as *M. pudica*.

48. *NEPTUNIA LUTEA*, *Benth. in Hook. Jour. Bot. IV. p. 356.* *Acacia lutea*, *Leav.*; *Torr. & Gr. l. c.* Moist prairies, April — June.

49. *ACACIA HIRTA*, *Nutt. in Torr. & Gr. l. c.*; and

50. β *GLABRIOR*. Dry, open woods around Houston; May, June, and frequently flowering again in September.

51. *ACACIA FARNESIANA*, *Willd.*; *Benth.* Nearly the only shrub on Galveston Island, where it attains the height of 6 or 7 feet, and forms considerable thickets. Its odorous flowers are produced in April or May. Certainly indigenous to Texas, and probably also to Florida.

52. *LYTHRUM ALATUM*, var. γ , *Torr. & Gr. Fl. I. p. 482.* "*L. foliosum*, n. sp." *Engel. MSS.* (who has noticed two states, viz., 1. *stamineum*; filaments as long as the darker colored petals, the style not exceeding the calyx, and the ovary frequently sterile? 2. *stylosum*; filaments as long as the calyx only, the style as long as the apparently smaller and paler petals, or longer.) But, if a distinct species, it will fall under *L. lanceolatum*, *Ell.*

53. *ŒNOTHERA DRUMMONDII*, *Hook.* Downs of Galveston. April, May; also in the autumn.

54. *Œ. LINIFOLIA*, *Nutt.* Galveston Island.

55. *Œ. SPECIOSA*, *Nutt.* Houston. April, May.

56. *Œ. RHOMBIPETALA*, *Nutt. in Torr. & Gr. Fl. I. p. 493.* This handsome species, so remarkable for its acute or acuminate petals, has been cultivated in the botanic garden of Harvard University from seeds received from Mr. Lindheimer. His specimens have broader leaves and petals than those from Arkansas; the upper leaves ovate-lanceolate, closely sessile and somewhat cordate. The pods are cylindrical-prismatic, some-

what hairy and often incurved. (*Æ. bifrons*, Don, has rounded petals.) Galveston to the Brazos. June, July.

57. *LUDWIGIA HIRTELLA*, Raf.; Torr. & Gr. l. c. Houston.

58. *L. LINEARIS*, var. *PUBERULA*: caule ramosissimo angulato foliisque junioribus minutim puberulis; lobis calycis triangulari-lanceolatis acuminatis tubum æquantibus capsula elongato-turbinata subpedicillata dimidio brevioribus; petalis flavis conspicuis. — Prairies and road-sides, Houston. June, September. Also in Alabama, Louisiana, &c.; these characters gradually shading away into the ordinary *L. linearis*, in its branching forms, so that we cannot consider it as a distinct species.

59. *JUSSIEA DECURRENS*, DC. Houston, &c.

60. *GAURA SINUATA*, Nutt. Steep river-banks, &c., west of the Brazos. August.

61. *GAURA LINDHEIMERI* (*n. sp.*): perennis, erecta, virgato-ramosa, strigoso-pubescens vel hirsuta; foliis infimis spathulatis lyrato-pinnatifidis sinuatisve, caulinis sessilibus lanceolatis acutis sinuato-dentatis vel undulatis, supremis plerumque integris; bracteis ovato-lanceolatis acuminatis scariosis caducis; calycis tubo ovarium sessile æquante segmentis (in alabastro hirsutis) multo brevioribus; petalis 4 spathulato-rhomboides breviter unguiculatis subadscendentibus staminibus 8 styloque deflexis paulo brevioribus; nuce tetraquetra circumscriptione ovali utrinque acuta, faciebus usque ad medium carinato-costatis fere lævigatis. — Prairies from Houston to the Brazos, flowering from April to May, and through the summer. In the botanic garden of Harvard University, where it is cultivated from seeds collected by Mr. Lindheimer, it also flowers through the whole summer, and proves to be a very showy and elegant species. It attains the height of from 3 to 6 feet, and its copious racemose branches produce a long succession of blossoms which are of a large size for this genus. The petals, which are often three-fourths of an inch long, are pure white changing to rose color; the calyx is reddish. Flowers always tetramerous and octandrous. This is probably the

same as the Texan plant referred by Spach to *G. tripetala*, Cav.; but it does not agree with the figure of Cavanilles, nor exhibit any trimerous flowers.

62. *ERYNGIUM CORONATUM*, Torr. & Gr. *Fl.* I. p. 604. Bottom woodlands on the Brazos. August.

63. *CYNOSCIADIUM PINNATUM*, DC. β *PUMILUM*. Differs from the larger and erect form (which is usually a foot or two in height,) in its low and diffuse stems, its umbellets with only four or five rays, and few or no involucreal leaves. Prairies, Galveston. April, May.

64. *LEPTOCAULIS ECHINATUS*, Nutt. Galveston Island.

65. *DISCOPLEURA CAPILLACEA*, DC. Galveston. May.

66. *SPERMACOCE GLABRA*, Michx. Near Houston. Sept.

67. *MITREOLA PETIOLATA*, Torr. & Gr. Swampy thickets west of Houston.

68. *POLYPREMUM PROCUMBENS*, Linn. Houston. June.

69. *HEDYOTIS BOSCHII*, DC. Houston. May and June.

70. *VERNONIA ANGUSTIFOLIA*, var. γ Torr. & Gr. Wet prairies west of the Brazos. July.

71. *LIATRIS ELEGANS*, Willd. Houston to the Brazos.

72. *L. ACIDOTA*. = *L. mucronata*, Torr. & Gr. *Fl.* II. p. 70, non DC. Houston to the Brazos, in wet prairies. August, September. In the Flora of North America, this species, which is apparently common in Western Louisiana and Texas, was hesitatingly referred to *L. mucronata*, DC., from the character of which it differs in some respects, principally in the form of the involucreal scales. But among Lindheimer's plants, some specimens of what is no doubt the true *L. mucronata*, DC. occur, (which have been distributed in some sets, probably mixed with *L. acidota*,) and which render it clear that the present is a different, although very nearly allied species. We have accordingly given a new name. The diagnosis may be expressed as follows; the habit, foliage, &c. being nearly the same in both; and the involucreal scales more or less ciliate when young.

L. mucronata: capitulis in spicam strictam arcte digestis;

invol. squamis ovalibus obtusis abrupte mucronatis; pappo plumoso achænio pubescente vix longiore; caudice globoso. — Capitula (3–5 flora) et flores magnitudinis illorum *L. tenuifloræ*. Texas, *Berlandier*, *Lindheimer*; near Houston, and near the mouth of the Brazos.

L. acidota: capitulis in spicam strictiusculam sæpius elongatam digestis; invol. squamis oblongo-lanceolatis (extimis tantum ovatis) purpurascentibus, sensim acuminato-cuspidatis; pappo plumoso achænio puberulo subglabrove longiore; caudice perpendiculari incrassato e cormo globoso. — Capitula (sæpius 3-flora) squamæ floresque iisdem *L. mucronatæ* duplo majora. Western Louisiana, *Hale*. Texas, *Drummond*, *Lindheimer*.

73. *L. ACIDOTA*, β VERNALIS: caulibus; humilibus (spitham. — pedal.) multicipitibus; spicis brevibus laxiusculis; capitulis sæpius 4–5-floris. — Wet, sandy prairies, near Houston. April, May.

74. *L. PYCNOSTACHYA*, *Michx.* Houston to the Brazos. August.

75. *EUPATORIUM ROTUNDIFOLIUM*, *Linn.* Houston. Aug.

76. *E. INCARNATUM*, *Walt.* Thickets near Houston. September — October. (This delicate species, which is quite rare in herbaria, grows abundantly on the rocky banks of the French Broad River, North Carolina, about ten miles below Asheville.)

77. *MIKANIA SCANDENS*, *Willd.* Houston, &c.

78. *ASTER PHYLLOLEPIS*, *Torr. & Gr. Fl. II. p. 113.* Prairies, Houston. June — October.

79. *ERIGERON SCAPOSUM*, *DC.* Quicksands of the downs of Galveston Island. April, and continuing to flower until October.

80. *GUTIERREZIA TEXANA*, *Torr. & Gr. Fl. II. p. 194.* Dry, barren soil, Houston. September — October.

81. *SOLIDAGO NITIDA*, *Torr. & Gr. l. c.* Prairies on Chocolate Bayou, 50 miles south of Houston. September, October.

82. *S. TENUIFOLIA*, *Pursh.* Wet prairies. October.

83. *S. LEPTOCEPHALA*, *Torr. & Gr. l. c.* Wet prairies, Houston. September. — We have two forms; one with broader leaves and larger heads, bearing about 5 disk and 11 ray-flowers; another, with narrower leaves and smaller heads, which have about 3 disk and 10 ray-flowers.

84. *S. BOOTHII*, *Hook.; Torr. & Gr. l. c.* Houston. July — September.

85. *S. TORTIFOLIA*, *Ell.* With the preceding.

86. *BIGELOVIA NUDATA*, β *VIRGATA*, *Torr. & Gr. l. c.* Prairies on Chocolate Bayou. September.

87. *BRADBURIA HIRTELLA*, *Torr. & Gr. Fl. II. p. 250.* Prairies, in hard, clayey soil, west of the Brazos. July, August. — The flowers of this very interesting and pretty plant are certainly yellow (a point which could not be positively determined from Drummond's specimens,) and the genus was therefore rightly placed in the homochromous series.

88. *HETEROTHECA SCABRA*, *DC.* Houston, &c. July.

89. *CHRYSOPSIS GRAMINIFOLIA*, *Nutt.;* and

90. *C. PILOSA*, *Nutt.* Houston, &c.

91. *AMBROSIA CORONOPIFOLIA*, *Torr. & Gr. l. c.* Sub-saline prairies, Galveston Bay, &c. July.

92. *BERLANDIERA TOMENTOSA*, β *DEALBATA*, *Torr. & Gr. l. c.* Sandy prairies west of the Brazos. June.

93. *ZINNIA MULTIFLORA*, *Linn.* With the preceding.

94. *ECHINACEA ANGUSTIFOLIA*, *DC.* Pine woods near Houston. April, May. The slender and original form of this species, which varies much as does *E. purpurea*. The peduncles are scarcely incrassated at the summit, the head hemispherical, with 8 to 13 narrow, rose-colored rays. The northern form, (*E. sanguinea*, *Nutt.*) is a much stouter plant, the peduncle much thickened at the summit, the head twice the size, and at length conical, with 12 to 16 dark red rays. Both forms are quite variable.

95. *RUDBECKIA ALISMÆFOLIA*, *Torr. & Gr. l. c.* Houston to the Brazos.

96. *HELIANTHUS CUCUMERIFOLIUS*, *Torr. & Gr. Fl.* II. p. 319. Sandy soil, west of the Brazos. July, August. The mottled stems, with the leaves all cordate and coarsely toothed, and the narrow involucral scales quite reflexed and tapering gradually into long subulate points, are uniform in all the specimens. The foliage is deep green.

97. *H. PRÆCOX* (*n. sp.*): annuus vel biennis; caule hispidulo ramoso; foliis alternis longe petiolatis (subcinereis) leviter serratis deltoideo-ovatis in petiolum abrupte attenuatis, infimis tantum cordatis; pedunculis elongatis monocephalis; involucris foliolis lanceolatis, subulato-acuminatis discum vix superantibus; corolla fl. disci atro-purpurea gracili; achenio piloso; paleis pappi lanceolatis puberulis. — In loose sandy soil impregnated with salt, Galveston Island. April and May; in cultivation flowering from June to October. Plant $1\frac{1}{2}$ – $2\frac{1}{2}$ feet high; the heads about as large as in *H. cucumerifolius*, to which it is nearly allied; but from which it is constantly distinguished by its smaller size, the slightly toothed and seldom cordate leaves, the broader and more abruptly pointed involucral scales, the slender disk-corollas, the nearly flat (instead of hemispherical) disk in fruit, &c., &c.

98. *H. OCCIDENTALIS* β *PLANTAGINEUS*, *Torr. & Gr. l. c.* Bottom lands, south of Houston. August, September.

99. *H. RIGIDUS*, *Desf.* Fertile prairies. June—August.

100. *H. ANGUSTIFOLIUS*, *Linn.* Wet prairies. June—Aug.

101. *COREOPSIS DRUMMONDII*, *Torr. & Gr. l. c.* Sandy downs of Galveston Island. May—October.

102. *C. TINCTORIA*, *Nutt.* Prairies on Galveston Island.

103. *GAILLARDIA PICTA*, *Don.* Galveston Island, on a soil formed of fragments of shells. May.

104. *G. AMBLYODON*, *Gay.* In sandy or gravelly soil, west of the Brazos. May—July. This species is equally showy with the preceding in cultivation: the copious rays are deep reddish-flame-color, with brown-purple at the base, and underneath.

105. *G. LANCEOLATA*, *Michx.* Galveston Island, &c.

106. *PALAFOXIA TEXANA*, DC. Wet prairies, Houston. August. Annual, as is *P. Hookeriana* also.

107. *HYMENOPAPPUS ARTEMISIÆFOLIUS*, DC. Open oak woods, &c.; west of Houston, &c.; flowering from March to September. Radical leaves very variable.

108. *HELENIUM TENUIFOLIUM*, Nutt. Open woods. September.

109. *LEPTOPODA BRACHYPODA*, β (purpurea.) Torr. & Gr. Fl. II. p. 388. May.

110. *MARSHALLIA CÆSPITOSA*, Nutt. Dry prairies, Houston, &c. The specific name is singularly inappropriate, at least as applied to the Texan plant; for the stems are single, scattered, and not at all cæspitose. The lowest leaves are often lanceolate-oblong or spatulate.

111. *EGLETES ARKANSANA*, Nutt.; Torr. & Gr. Fl. II. p. 411. (E. Texana, Engel. MSS., but agrees very well with the original Arkansan plant. A. Gr.) Downs of Galveston Island, April, May, and also in November, when it has very diffuse and decumbent stems, somewhat woody at the base; but the plant is surely annual. After flowering, the tube of the corolla of the outer disk-flowers, as well as those of the ray, become enlarged and corky at the base; and the inner part of the disk is sterile. It is quite a handsome plant in cultivation.* The numerous rays are pure white above, and usually marked with pink underneath.

112. *GNAPHALIUM PURPUREUM*, Linn. var. (*G. spicatum*, Lam.?) April.

113. *CIRSIUM VIRGINIANUM*, Michx. Open woods. March to May.

114. *CENTAUREA AMERICANA*, Nutt. Moist fertile prairies, Houston. July.

115. *PYRRHOPAPPUS CAROLINIANUS*, DC. Dry prairies. May, June.

116. *LOBELIA GLANDULOSA*, Walt. Wet prairies and woods. September. A more or less scabrous form: bracts lanceolate from a broad base; the sinuses of the calyx very slightly re-

flexed. The specimens collected in shady places are less rough ; the tube of the calyx is either hispid or nearly glabrous.

117. *VACCINIUM ARBOREUM*, *Marsh.* Woods. April.

118. *ASCLEPIAS PAUPERCUA*, *Michx.* Swamps near the coast. Stem 4–6 feet high. Root tuberous. June.

119. *SEUTERA MARITIMA*, *Reichenb., Decaisne.* (Lyonia, *Ell.*) Wet, saline prairies, Galveston, &c. May.

120. *SABBATIA CAMPESTRIS*, *Nutt. Contrib. Fl. Arkans.* &c. Flowers April to May, and again in August and September ; in dry prairies.

121. *S. CALYCOSA*, *Pursh* : a variety with rather longer calyx lobes than usual. Shady margins of streams near Houston. May, June.

122. *GILIA CORONOPIFOLIA*, *Pers. ; Benth. in DC. Prodr.* VIII. p. 313. Dry prairies and open woods. June, July.

123. *CUSCUTA NEUROPETALA*, *Engel. in Sill. Jour.* XLV. p. 75. β MINOR. A smaller, earlier flowering form, growing in drier places, mostly on *Petalostemon multiflorum*, but also on *Liatris*, and even on *Euphorbia corollata*. It approaches *C. hispidula* so much that, not improbably, further investigation of living plants may prove both to be only varieties of a single species, for which the name of *C. porphyrostigma* would be most appropriate, as all the forms that would belong to it, are distinguished from every other known North American species by the purplish-brown stigmas. Another remarkable variety is :

124. *C. NEUROPETALA*, *Engel.* γ LITTORALIS : cymis paniculatis ; floribus majoribus pedunculatis ; tubo corollæ late campanulato calycis segmenta late ovata acutiuscula subcarinata et lacinias limbi enervias ovatas abrupte acuminatas crenulatas patentes subæquante ; squamis tubum subæquantibus. — Seashore of Galveston Island, on *Lycium Carolinianum*, *Borrichia frutescens*, *Iva frutescens*, &c. Flowers in May. Different from the inland form by the much larger, more openly campanulate flowers, expanding in spring ; by the hardly carinate, broader, and not so acute sepals, and the broad lobes of the

corolla, which are rarely somewhat nerved ; stigmata also purple, and anthers purple or yellow. (*Engel.*)

125. *C. CUSPIDATA* (*Engel. n. sp.*) : caule filiformi ramosissimo ; floribus pedunculatis in cymas laxas bracteosas dispositis 5-fidis ; tubo corollæ cylindrico sepala usque ad basin libera ovata concava (exteriora cuspidata) et lacinias limbi ovatas acutiusculas uninervias erectas s. patentes superante ; staminibus limbo brevioribus ; squamis ovatis fimbriatis tubum subæquantibus ; stylis filiformibus ovario (minuto) globoso pluries longioribus ; capsula globosa corolla marcescente obtecta. — Var. *α. PRATENSIS* : floribus minoribus ; calyce bracteis paucis involucrato ; tubo corollæ subcylindrico calycis et corollæ segmentibus paulo longiore ; staminibus limbi laciniis ovatis acutiusculis duplo brevioribus ; stylis ovarium parvum duplo superantibus. — Dry prairies west of the Brazos, on *Tephrosia*, *Bradburia*, *Ambrosia*, &c. June. — Var. *β. HUMIDA* : floribus majoribus ; calyce bracteis pluribus involucrato ; tubo corollæ infundibuliformi calycis et corollæ segmenta duplo superante ; staminibus laciniis limbi lanceolatis acutis paulo brevioribus ; stylis ovarium minutum quater superantibus. Bottom lands of the Colorado, on *Iva ciliata*, *Ambrosia trifida*, &c. August, 1844, (No. 276, *infra.*) — A remarkable species. The stems are very much branched, filiform ; inflorescence loose paniculate, pedicels with many cuspidate bracts, some of them surrounding the calyx like an involucre, similar in shape but smaller than the sepals ; sepals somewhat lacerate or crenulate, ovate, carinate, (the carina less distinct in the var. *β.*) cuspidate, interior ones rather obtuse, all concave, loosely imbricated. Lobes of corolla thin membranaceous, with a strong middle nerve, formed by large oblong or linear cells ; when dry, convolute ; the exterior ones generally somewhat cuspidate, the interior ones obtuse ; at the base the lobes are dilated and cover one another, more than in any other North American species. Styles remarkably slender and long, about the length of the stamens, but elongated after flowering, when the corolla assumes an urceolate shape, and finally covers like a

hood the upper part of the globose capsule.—It appears to be an intermediate form between *Cuscuta* proper and *Lepidanche*. The var. β has larger and thinner flowers, of paler color, and the lobes of the corolla lanceolate and acute. *Engel*.

126. *C. PENTAGONA*, β *CALYCINA*, *Engel*. Wet prairies. June.

127. *C. VERRUCOSA*, *Engel. l. c.* Dry prairies. July.¹

¹ An undescribed North American species, collected in the Alleghanies of Virginia and North Carolina by Dr. Gray and Mr. Sullivan, in the autumn of 1843, is here appended. (This was named *C. oxycarpa*, n. sp.; but, just as these sheets are going to press, Dr. Engelmann writes that Mr. Shuttleworth has distributed the same plant from Rugel's collection, with a printed label, under the name of *C. rostrata*, which he therefore now substitutes for his own. A. Gr.)

C. ROSTRATA (*Shuttlew. in coll. Rugel*): caule ramoso; floribus pedunculatis cymoso-umbellatis 5-partitis; tubo corollæ globoso-campanulato calycis segmenta ovata obtusa leviter crenulata et lacinias limbi ovatas obtusas patentes (demum reflexas) duplo superante; staminibus limbum subæquantibus; squamis fimbriatis (convergentibus?) basi inter se connatis; stylis filiformibus ovarium stylopodio ejusdem longitudinis coronatum pyriforme subæquantibus; corolla marcescente ad basin capsulæ (maximæ) acutata persistente.—Alleghany Mountains from Virginia to South Carolina, (*Mr. Buckley!* 1842.) *Prof. Gray* and *Mr. Sullivan!* 1843.—August to October.—Particular localities recorded by Messrs. Gray and Sullivan are: Grandfather and Negro Mountains, N. Carol.; Tygart's Valley, Va.; and "common in moist, shady ravines in western Virginia." The specimens which came under my observation grow on *Urtica*, *Rubus*, *Aster*, *Solidago*, *Rudbeckia*, and some other plants.

After repeated and careful investigation, and with some hesitation, I have admitted this mountain plant as a distinct species, different from *C. vulgivaga*. The large pointed capsule would seem to characterize it at once; but *C. vulgivaga* offers so many different forms and sizes of the capsule, that other characters were necessary; and they are found in the tissue of the corolla, which is ever destitute of the large pellucid dots constantly observed in *C. vulgivaga*, but is composed, especially about the tube, of regular, somewhat elongated, hexangular cells, easily distinguishable in dried specimens with a common glass. In the common species, the cells are linear, mostly much elongated, interspersed with the large air-cells, which have been frequently mentioned. The flowers are mostly twice as large as in *C. vulgivaga*, but of the same shape and proportion, about 2, and sometimes (especially in Tygart's Valley specimens) 3 lines long; but the elongated ovary, whose stylopodium is nearly as long, though only half as thick, as the ovary proper, distinguishes it at once even from those forms of *C. vulgivaga* where the stylopodium is unusually large. The filiform styles are at first about the length of the stamina, but soon after they are long exerted. The capsule is very large, fully 3 lines long, globose, attenuated to a bifid point; it is larger and more acute than in any other known American species.—During the same journey, the following species was abundantly collected:

C. (LEPIDANCHE) COMPACTA (*Choisy*): caule ramoso; floribus sessilibus glomeratis 5-partitis; sepalis sub-novem leviter crenulatis orbiculatis concavis adpressis,

128. *IPOMÆA SAGITTATA*, *Desf.*; *Choisy*. June — Sept.

129. *CONVOLVULUS AQUATICUS*, *Walt.* Wet prairies west of the Brazos. Often 10 feet long. July.

130. *NAMA JAMAICENSIS*, *Linn.*? Sandy prairies, &c. near the Brazos. June. Annual.

131. *LITHOSPERMUM TENELLUM*, *Nutt. in Trans. Amer. Phil. Soc. (n. ser.)* V. p. 88. On the Brazos, &c. April — August.

132. *HELIOTROPIUM CURASSAVICUM*, *Linn.* Galveston, &c.

133. *H. INUNDATUM*, *Swartz*; *DC. prodr.* 9, p. 539. Banks of the Brazos. June.

134. *EUTOCA HIRSUTA* = *Phacelia hirsuta*, *Nutt. in Trans. Amer. Phil. Soc. l. c.* p. 191. Pine woods near Houston. March and April. Corolla with 5 very obscure pairs of squamellæ at the base of the tube. Ovary 5–10-ovuled. (Vide No. 279, 280, *infra*.) Also Texas, Drummond's Coll. 3, No. 299.

interioribus minoribus; tubo corollæ cylindrico calycem et lacinias limbi lineari-oblongas obtusas duplo superante; staminibus limbo brevioribus; squamis pinnatifido-laciniatis; ovario cum stylopodio stylos subæquante; capsula globosa subacuta corolla marcescente oblecta 1–4-sperma. — North Carolina to Alabama, in the mountains, on shrubs, frequently on evergreens; on *Corylus rostrata*, Buncombe Co., N. Carol.; on the same, and on *Andromeda axillaris* or *spinulosa*, on the sides of Negro Mountain, N. Carol., *Prof. A. Gray* and *Mr. W. S. Sullivan*; in Alabama, on *Prinos glaber*, *Dr. Gates*, (*Herb. Gray*.)

This is clearly the *Cuscuta compacta* of Choisy's monograph, (and of *DC. prodr. excl. syn.*) described after specimens collected in Alabama and Georgia; the notice in Silliman's Journal, Vol. XLIV. p. 195, must therefore be corrected. — It is very near *Cuscuta* (*Lepidanche*) *adpressa*, which thus far has only been found on the bottom lands of the Mississippi and Illinois Rivers. This is again a remarkable instance of two nearly allied species, one growing in the mountainous region of the Southern States, the other one in the western lowlands. Analogies offer in *Baptisia alba* and *leucantha*, *Phacelia fimbriata* and *Purshii*, and others. The mountain species is distinguished from its western relative by the closer and compacter glomerules, and much more slender and mostly smaller flowers. The tube of the corolla exceeds the compact scales of the calyx considerably, and is much narrower in proportion to its length; it gives, therefore, to the capsule which it covers, a much more pointed appearance, though the capsule itself is nearly globose. This appearance of the vestiges of the corolla on the capsule distinguishes this species from *C. adpressa* just after flowering. The corolla appears to be more membranaceous than in the western species, and remains whitish when well preserved in the herbarium; the other usually turns reddish-brown.

135. *SOLANUM TEXENSE* (*n. sp.*): perenne, inerme, tomento stellato incanum; caule (pedali) herbaceo erecto ramoso; foliis (2-4-unc.) petiolatis lanceolatis undulatis sinuato-dentatis integerrimisve sparsis; racemis terminalibus; pedunculis flore longioribus fructiferis deflexis; calyce 5-fido; corolla violacea extus ad carinas stellato-pubescente; staminibus æqualibus; baccis flavis. — Road-sides, prairies, &c., Houston to the Brazos. June — September. (This is also No. 200 of Drummond's Third Texan Collection. We likewise have specimens from Dr. Wright.)

136. *PHYSALIS PUBESCENS*? (*P. maritima*, *M. A. Curtis*, *MSS.*) Coast of Galveston Island. April — November.

137. *HERPESTIS MONNIERA*, *Humb. & Kunth*. Wet places. June, July.

138. *CONOBEA MULTIFIDA*, *Benth. in DC. prodr. & Torr. & Gr. Fl. ined.* (*Capraria*, *Michx.*) Brazos. July.

139. *BUCHNERA ELONGATA*, *Swartz, Benth. l. c.* Galveston to the Brazos. April, May, and again in July. Flowers smaller than in *B. Americana*, the teeth of the calyx and bracts less acuminate.

140. *HERPESTIS NIGRESCENS*, *Benth.* Brazos, &c. August.

141. *GERARDIA SPICIFLORA*, *Engel. MSS.* *G. maritima* β *grandiflora*, *Benth. in DC. prodr. ined.* Margin of brackish ponds, Galveston Island.

142. *PENTSTEMON COBÆA*, *Nutt. in Trans. Amer. Phil. Soc. (n. ser.)* V. p. 182. Ravines near Houston. May.

143. *SCUTELLARIA DRUMMONDII*, *Benth. Lab.* p. 441. On soil composed of fragments of shells, on the coast of Galveston Island. May. Apparently annual: stems 10 to 29 inches high.

144. *S. CARDIOPHYLLA* (*n. sp.*): puberula; caule erecto (1-2-pedali) ramoso; foliis omnibus petiolatis cordato-triangularibus obtusiusculis caulinis, grosse crenatis, floralibus gradatim minoribus integrioribusque lato-cordatis vel deltoideis, summis bracteiformibus; floribus axillaribus oppositis; corollis pubescentibus calyce pedicello longiore plus triplo longioribus. — Var. β . *humilior*, foliis omnibus parvulis. — Open woods,

&c. near Houston. Flowering through the summer. Dr. Engelmann has likewise collected the smaller variety at the Hot Springs, in Arkansas. Fruiting specimens of this well-marked species also exist in Drummond's Texan Collection, (No. 209, Coll. 3,) but we find no allusion to it in Bentham's fine Monograph of the Labiatae. The smaller forms might be confounded with *S. parvula*, but even the floral leaves are distinctly petiolate, broadly triangular-ovate, or cordate, and more or less crenate-toothed; all are shorter than the corolla, which is three-fourths of an inch long; the uppermost scarcely exceeding the calyx. The cauline leaves are from one to nearly two inches in length, and considerably resembling those of *S. saxatilis*, Riddell: those of the elongated flower branches scarcely half an inch long. Achenia strongly tuberculate. Root apparently annual.

145. *SALVIA AZUREA*, *Lam.* Houston. May to September.

146. *HYPTIS RADIATA*, *Willd.* Houston. September.

147. *PHYSOSTEGIA VIRGINIANA*, *Benth.*, var. *foliis ovalibus oblongisve subdenticulatis*. (*Dracocephalum variegatum*, *Vent.*, *Ell.*) Wet prairies west of the Brazos. July.

148. *P. VIRGINIANA*, var. *foliis lanceolatis argute serratis*. Dry, sandy soil. Houston. September.

149. *TRICHOSTENMA DICHOTOMUM*, *Linn.* September.

150. *TEUCRIUM CUBENSE*, *Linn.*, *Benth. Lab.* p. 668. Galveston Island. April, May.

151. *MONARDA LINDHEIMERI*, (*n. sp.*): caule glabro superne piloso subsimplici; foliis ovatis acuminatis subcordatis grosse serratis glabris glandulosis margine scabris, petiolis brevibus basi pilosis; bracteis acuminatis integris capitulum laxum subæquantibus; calycibus glandulosis, dentibus subulatis diametrum tubi subæquantibus, fauce villosa; corolla glandulosa et villosa.—Prairies and margin of woods, in clayey soil. April to June, and again in October.—According to Mr. Bentham's view, this would probably be deemed a variety of *M. clinopodia*.

152. *M. PUNCTATA*, *Linn.* Houston. July.

153. *M. ARISTATA*, *Nutt. in Benth. Lab.* p. 318, in *Mem. Amer. Phil. Soc. (n. ser.)* V. p. 186. Prairies east of the Brazos. June.

154. *VERBENA STRIGOSA*, *Hook. Compan. to Bot. Mag.* I. p. 176. Roadsides, near Houston. April—July. Lower leaves obovate and tapering into a winged petiole, doubly incisely toothed; the upper tri-multifid. The hispid pubescence of the stem is not appressed. The foliage, the more slender spikes, and the much shorter fruit distinguish the species readily from *V. stricta*.

155. *V. SPURIA*, var. *caulibus erectis; bracteis brevioribus*. Dry prairies, Galveston, to the Brazos. March to July.

156. *ZAPANIA NODIFLORA*, *Lam.* var. *foliis lanceolato-cuneiformibus*. Downs of Galveston Island. April.

157. *DIPTERACANTHUS* (*PANICULARIA*, folia floralia in bracteis parvas reducta, ideo cyma trichotoma terminalis) *NUDIFLORUS* (*n. sp.*): parce pilosus, demum glabratus; caule erecto herbaceo; foliis ovalibus ovato-oblongisve obtusis margine obsolete repandis basi in petiolum attenuatis; cymulis trifloris in cymam laxam glanduloso-puberulam congestis; bracteis lineari-lanceolatis pedunculis multo brevioribus; tubo corollæ apicem versus sensim dilatato calycis lacinias attenuato-subulatas duplo triplove longiore; capsulis puberulis subclavato-cylindræis vel oblongis utrinque acutis 8–12-spermis calycem æquantibus. — Open woods at Sim's Bayou, near Houston. May to July. Also, in Drummond's Texan Collection, (Coll. 2, No. 221, and 3, No. 257.) Stems one to two feet high, simple or branched from the base, slender, pubescent when young, as well as the leaves and petioles, with scattered hairs. Corolla two inches long. Anthers somewhat included; the lobes slightly mucronate at the base. Stigma a simple lamella, with a mere rudiment of the second lobe. — This well marked species differs from the rest of the genus in its inconspicuous bracts, and naked, more explicate inflorescence, which entitle it to the rank of a distinct section.

158. *D. CILIOSUS*, *N. ab E. in Linn.* XVI. p. 294. = *Ruellia ciliosa*, *Pursh.* Open woods, Houston. June.

159. *DIANTHERA HUMILIS.* In clear water. June.

160. *DICLIPTERA BRACHIATA*, *Spreng.* Shady woods, Houston. June — September. Seeds hispid, with short, minutely glochidiate bristles.¹

161. *UTRICULARIA SUBULATA*, *Linn.* Wet prairies of Galveston Island. April.

162. *SAMOLUS EBRACTEATUS*, *H. B. K.* Sandy brackish soil, Galveston. April. It is singular that this should have been overlooked by Duby, in *DC. Prodr.*, as a North American plant. It was recorded as such by Torrey in the report on the plants collected in Major Long's Expedition, and is not uncommon along the coast from Florida to Texas. The leaves in the Texan plant, as generally in our specimens, are obovate or broadly spatulate, tapering into pretty long winged petioles, which are decurrent on the stem.

163. *PLANTAGO GNAPHALOIDES*, *Nutt.* Galveston Island.

164. *P. ARISTATA*, *Michx.* Houston, &c. April.

165. *IREGINE CELOSIODES*, *Linn.* Houston. September.

166. *OPLOTHECA FLORIDANA*, *Nutt.* Prairies and open woods in loose sandy soil, west of the Brazos. August.

167. *ERIOGONUM LONGIFOLIUM*, *Nutt.*, *Benth.* β *PLANTAGINEUM*: foliis brevioribus latioribusque. Dry prairies west of the Brazos. July, August. The same form occurs in Drummond's Third Texan Collection, No. 352.

168. *POLYGONELLA ERICOIDES.* = *Gonopyrum Americanum*, *Fisch. & Meyer, in Mem. Acad. St. Petersb. (ser. 6.)* IV. p. 144. Prairies, west of San Felipe, on the Brazos.

¹ Among Lindheimer's plants a few specimens were received of the *Ruellia justiciæflora*, *Hook. Comp. to Bot. Mag.* I. p. 176, which has also been distributed by Dr. Riddell, under the name of *Eberlea*. We refer it to the genus *Hygrophila*, R. Br. To the character given by Hooker, for the most part excellent, we may add, that the stem and leaves are somewhat fleshy, and that the upper lip of the corolla is not entire, but 2-cleft. The anthers of the shorter pair of stamens are smaller than the others, but are polliniferous and 2-celled. The plant grows in wet swamps, and flowers in the autumn.

July. A low shrubby plant, 1–2 feet high, with the aspect of a heath.¹

¹ This plant also occurs in Drummond's Texan Collection (No. 19 & 348 of 3d Coll.); from which source doubtless Fischer and Meyer obtained the specimens, upon which they established the genus *Gonopyrum*. But their genus must be reduced to *Polygonella*, from which it differs only in the hermaphrodite, instead of dioico-polygamous flowers, a character which would be insufficient, even if constant, which it probably is not. The filaments of *Polygonella polygama* (which are more correctly described than figured by Ventenat) are not materially different from those of the new Texan species. The generic character, &c. should properly stand as follows:

POLYGONELLA, *Michx.* (Trib. Rumiceæ, *Meyer.*)

Polygonella and *Gonopyrum*, *Meyer l. c. supra.*

Flores dioico-polygami vel hermaphroditi. Perigonium pentaphyllum, petaloideum; phyllis seriei exterioris 2 immutatis fructif. reflexis, seriei interioris 3 erectis planis post anthesin ampliatis conniventibus fructum triquetrum includentibus. Stamina 8: filamenta dimorpha; nempe, tria phyllis perigonii interioribus opposita inferne dilatata et sæpe bidentata; cætera subulato-setacea. Styli 3: stigmata capitata. Embryo in axi albuminis rectiusculus. — Fruticuli ramosissimi glabri, in planitiibus aridissimis Amer. Bor.-Orient. calidioribus vigentes; ramis hornotinis herbaceis foliosis ochreatis (ochreis brevibus nudis unidentatis); foliis crassiusculis parvulis linearibus spathulatisve subsessilibus sparsis vel in axillis pl. m. fasciculatis; floribus (albis vel roseis) parvis spicato-racemosis; rachi dense et appresse imbricatim ochreato-bracteati quasi articulati; pedicillis solitariis articulatis, fructiferis pendulis; racemis sæpius paniculatis.

1. *P. polygama*: foliis cuneato-linearibus spathulatisve; floribus dioico-polygamis; sepalis ovalibus ad anthesin subæqualibus; filamentis tribus basi ovato-dilatatis vix aut ne vix dentatis; stylis brevissimis. — *Polygamum polygamum*, *Vent. Hort. Cels. t. 65*; *Ell. Sk. I. p. 458*. *Polygonella parvifolia*, *Michx. ! Fl. II. p. 240*; *Nutt. Gen. I. p. 256* (sub *Polygono*); *Meisn. Gen. Vasc. Comm. p. 228*. *Polygonum* (*Polygonella*) *gracile*, *Nutt. Gen. l. c. ?* — In arenosis (sandy pine-barrens,) Carolinæ! Georgiæ! Floridæ (*Bartram! Leavenworth!*) et, fide *Nutt.*, in Arkansas.

2. *P. ericoides*: foliis linearibus vel anguste spathulato-linearibus fasciculatis; floribus (an semper?) hermaphroditis; sepalis orbiculatis, interioribus subcordatis exteriora virido-carinata ad anthesin superantibus; filamentis tribus basi valde bidentato-dilatatis quasi obcordatis; stylis longiusculis. — *Gonopyrum Americanum*, *Fisch. & Meyer, in Mem. Acad. St. Petersb. l. c. supra.* — In planitiibus aridis Texas, *Drummond! Lindheimer! Wright!* Flores duplo majores quam in præcedente, ramis crassioribus, etc.

For the first species we have adopted the older specific name of Ventenat, in place of that of Michaux, chiefly because it is the largest-leaved species of the genus.

Polygonum articulatum, *Linn.*, which is joined, by Nuttall and Meisner, to *Polygonella*, with which, indeed, it nearly accords in habit (though an annual herb) and inflorescence, has all the sepals uniform and erect in fruit, the three inner not at all enlarged, and the embryo is lateral as in *Polygonum*.

169. *STILLINGIA SYLVATICA*, *Linn.* Prairies. April—June.

170. *S. LIGUSTRINA*, *Michx.* Thickets near water-courses, Houston. May. — The staminate flowers are rather conspicuously pedicellate, not *brevissime pedicellatis*, as described by Michaux.

171. *PILINOPHYTUM LINDHEIMERI* (*n. sp.*): annuus, stellato-tomentosus; caule (4–5-pedali) erecto ramoso; foliis longe petiolatis e basi ovata subcordatave lanceolatis sæpe acutato-mucronatis, inferioribus denticulatis; floribus fœmineis paucis ad basin spicæ mascule; staminibus sub-12; stigmatibus plerumque 12; seminibus vix compressis. — Dry prairies, Houston to the Brazos. Also, Texas, *Drummond*, and Western Louisiana, *Leavenworth*. A taller, more upright plant than *P. capitatum* (Croton, *Michx.*) with larger and less canescent leaves; the lower 4–5 inches long, and gradually acuminate to an usually sharp point, on petioles 3 inches long. The spike in fruit is less capitate, and the seeds are smaller and less compressed. Something like intermediate specimens between this and the *P. capitatum*, which also grows in

A remaining species, the *Polygonum fimbriatum* of Elliott, which has been deemed a near ally of *Polygonum polygamum*, may be taken as the type of a new genus, viz.:

THYSANELLA, *A. Gr.*

Flores dioico-polygami. Perigonium pentaphyllum petaloideum; phyllis omnibus erectis margine scariosis et eroso-fimbriatis, duobus exterioribus cordato-sagittatis post anthesin auctis, interioribus minoribus ovato-lanceolatis pectinato-fimbriatis. Stamina 8: filamenta filiformia perigonium adæquantia. Ovarium (infertile) trigonum: styli 3, filiformes; stigmatibus simplicibus. Fructus Semen — Herba ramosa, glabra, (bipedalis,) in arenosis Georgiae vicens, caulibus virgatis strictis; foliis angusto-linearibus elongatis acutatis striatulis sessilibus; ochreis truncatis setis capillaribus longissime barbatis; floribus (incarnatis) racemoso-spicatis; spicis solitariis vel geminis, paniculatis, dense imbricatim ochreato-bracteatis; ochreis oblique truncatis in acumen aristiforme productis; pedicellis in medio articulatis.

T. FIMBRIATA. = *Polygonum fimbriatum*, *Ell. Sk. I.* p. 588.

Elliott seems to have described from specimens with hermaphrodite flowers; but in mine (which were collected by Dr. Leavenworth either in Georgia or Florida) the ovaries are apparently all sterile. The fruit and seed is, therefore, unknown to me, and I am not certain that the outer sepals increase in size after flowering.

A. Gr.

Texas, render it doubtful, however, whether this plant is specifically different.

172. *GEISELERIA GLANDULOSA*, *Klotzsch, in Erichs. Archiv.* I. (1841) p. 254. Dry woods, Houston. May, June. The calyx of the sterile flowers is 5-parted, and the stamens 9 or 10.

173. *CROTON ARGYRANTHEMUM*, *Michx.* Margin of woods, Houston. April—June. The ovary is on an orbicular, not 5-glandular disk.

174. *EUPHORBIA BICOLOR* (*n. sp.*): annua; caule erecto foliis bracteisque undique villosis seu pilosis; foliis subsessilibus oblongo-lanceolatis vel lineari-oblongis cuspidatis basi obtusis; bracteis lineari-ligulatis elongatis basi attenuatis margine membranaceis decolorato-albidis; glandulis involucri villosi margine petaloideis suborbiculatis; capsulis dense lanatis; seminibus sparsim rugulosis. β CONCOLOR: marginibus decoloratis bractearum angustissimis aut subnullis; foliis latioribus. Prairies near Houston. June—September. Also Texas, *Drummond*. Arkansas, *Beyrich, &c.* A handsome species, resembling *E. marginata*, but distinguished by the narrower hairy leaves, much narrower bracts, &c.

175. *APHORA MERCURIALINA*, *Nutt. in Trans. Amer. Phil. Soc. (N. Ser.)* 5, p. 174. Serophyton pilosissimum, *Benth. Bot. Voy. Sulphur*, p. 53. In denudated soil, dry prairies, &c. Arkansas and Texas. May—July. Endlicher having entirely overlooked this genus of Nuttall's, Mr. Bentham has lately characterized it anew under the name of Serophyton. To his excellent character we have only to add, that the plants are sometimes diœcious, or subdiœcious, as, indeed, is mentioned by Nuttall in the case of the original species. What Nuttall takes for sterile filaments in the fertile flowers, Bentham describes as petals, and so Nuttall's name becomes unmeaning, which, however, is no great objection. Mr. Bentham's Californian species must, therefore, bear the name of *Aphora lanceolata*. His remaining Texan species, the *Aphora Drummondii*, was also collected by Lindheimer, but

not in sufficient abundance for distribution. It is a less hairy plant. Under No. 306 we describe a fourth species, *A. humilis*, which we also find in Drummond's second collection, No. 230. The leaves in *A. mercurialina*, as in *A. Drummondii*, often turn purplish, in drying. In No. 322 of Drummond's third collection, the leaves are oblong-ovate, or ovate-lanceolate, and often acute or acuminate, as in Lindheimer's specimens. In No. 263 of the second collection they are mostly ovate-orbicular.

176. *TRAGIA URTICÆFOLIA*, *Michx.* Houston, &c. April. *T. betonicæfolia*, *Nutt.*?

177. *PHYLLANTHUS POLYGONOIDES*, *Nutt.* (*Maschalanthus*, *Nutt.* = *Phyllanthus* proper, *Linn.*, *Juss.*, etc.) Grassy banks. July.

178. *CNIDOSCOLUS STIMULOSUS*. = *Jatropha stimulosa*, *Linn.* Houston. July.

179. *URTICA PURPURASCENS*, *Nutt. in Trans. Amer. Phil. Soc. (N. Ser.)* V. p. 169. Thickets, Galveston Island.

180. *QUERCUS VIRENS*, *Ait.* Moist woods along the coast.

181. *TAXODIUM DISTICHUM*, *Rich.* Houston, &c.

182. *SAGITTARIA SIMPLEX*, *Pursh.*? Ponds in clayey soil, near Houston. June—September. Our plant has rather rigid linear-lanceolate leaves; the calyx as well as the ovate acute bracts are a little pubescent; the fertile flowers are on short, the sterile on rather long peduncles; the stamens from 20 to 30; and the carpels in fruit are compressed, rostrate, and falcate. Larger specimens, collected near the coast, with broader leaves, &c. bear larger flowers, with 40 to 50 stamens.

183. *S. STOLONIFERA* (*n. sp.*): stolonibus radicanibus; foliis submersis lato-linearibus acutis, emersis lineari-lanceolatis 3–5-nerviis; scapo simplici; bracteis ovatis acutis vel obtusiusculis brevibus; pedunculis subternatis omnibus elongatis; staminibus 12–16; carpellis compressis oblique suborbiculatis breviter mucronatis. — *S. graminea*, *Nutt. in Trans.*

Amer. Phil. Soc. l. c. p. 159. Ponds near Houston. September, &c.

184. *COMMELYNIA ANGUSTIFOLIA*, *Michx.* Houston. May.

185. *XYRIS CAROLINIANA*, *Walt.* β ? *SCABRA*: scapo apice magis ancipiti, aciebus subtilissime serrulato-scabris. *X. scabra*, *Engel. MSS.* Prairies, west of the Brazos. July.

186. *X. BULBOSA*, *Kunth, enum.* IV. p. 11, (ex descr.) With the preceding. The North American species still need thorough revision.

187. *HYPOXIS ERECTA*, β . *ÆSTIVALIS*: scapo subunifloro folia subæquante; capsulis subglobosis, (ut in α .) In prairies which have been burned over in spring. July.

188. *H. ERECTA*, γ . *LEPTOCARPA* (*H. leptocarpa*, *Engel. MSS.*): floribus minoribus; capsulis prismatico-oblongis ellipticisve; seminibus in singulis loculis uniserialibus 4-6. Sandy soil, along rivulets, June — August.

189. *EUSTYLIS PURPUREA*. (*Nemostylis*? *purpurea*, *Herbert, in Bot. Mag. sub. t. 3779.*) Open woods and prairies, from Houston to the Brazos. June, July. Also, Texas, *Drummond*, and Western Louisiana, *Dr. Hale*. The diagnostic characters of this genus and *Nemostylis* are subjoined. *Alophia*, *Herb.* differs, according to the character,¹ in having the inner divisions of the much more unequal perigonium naviculate, and differently shaped from the outer, in the very short filaments, &c., and in being tuberiferous instead of bulbiferous.

NEMOSTYLIS, *Nutt.* Perigonium hexaphyllo-partitum, conforme, patens, segmentis fere æqualibus, tubo nullo. Filamenta distincta, e basi lato subulata, antheris elongato-linearibus (connectivo angusto) post anthesin spiraliter convolutis

¹ The specimens of several of these Iridaceous plants, of very similar appearance in the dried state, appear to have been somewhat confused in the distribution of Drummond's Texan Collection. Under No. 414 of the Third Collection, we have, instead of *Alophia*, specimens of the *Herbertia cærulea*. Under No. 415, we have *Nemostylis acuta* (*geminiflora*, *Nutt.* *Ixia acuta*, *Barton*.) as well as *Gelasine Texana*. In the latter the filaments are certainly monadelphous, and the style has two or three short and simple lobes.

multo breviora. Stylus brevis (filamenta adæquans,) tenuis, apice trilobus; lobis bipartitis, partitionibus in stigmata filiformia radiatim productis.

EUSTYLIS. Perigonium hexaphyllo-partitum, conforme, patens; tubo nullo; segmentis obovatis planis, tribus interioribus modice minoribus. Filamenta distincta, e basi lato subulata, antheras subpanduriformes post anthesin immutatas æquantia: connectivum latum basi apicemque versus præsertim dilatatum, loculis marginalibus. Stylus elongatus (stamina adæquans,) ad apicem infundibuliformis, trifidus; lobis bifidis, partitionibus in stigmata filiformia recurvia attenuatis.—Habitus, bulbus, capsula, etc., omnino Nemostylis.

190. GYMADENIA NIVEA. (*Orchis nivea*, *Nutt.*) Moist prairies near Houston; April to June. The ovary remains straight; the labellum is therefore posterior. The outer lateral divisions of the perianth are also produced at the base on the upper side into a triangular blunt auricle, which is not noticed in Nuttall's description. The anther-cells are parallel and approximated.

191. SPIRANTHES VERNALIS (*n. sp.*): radice fasciculata; caule foliato; foliis linearibus, superioribus sensim minoribus vaginantibus lanceolato-subulatis; sepalis petalisque basi cohærentibus oblongo-linearibus, lateralibus angustioribus label- lum reflexum crenulatum apice non dilatatum æquantibus vel superantibus. — Moist prairies, Galveston and Houston; April, May. — Stem 1 to 2 feet high, slender; lower leaves often 5 to 6 inches long, 2 lines wide; bracts ovate, acuminate. Flowers much as in *S. cernua*, from which it is distinguished by its short lip, &c.

192. THALIA DEALBATA, *Fraser*. Swamps on the Brazos; September. — The seed appears to contain three embryos, of which only the central one is fully developed.

193. JUNCUS HETERANTHOS, *Nutt. in Trans. Amer. Phil. Soc. (N. Ser.)* V. p. 153. Galveston Island. May.

194. PONTEDERIA LANCIFOLIA, *Muhl.* July.

195. SMILAX LANCEOLATA, *Linn.* Rich shady soil near

water-courses. July. — Climbing to a great height. The rhizoma bears tubers which are called “Indian bread” in Texas. Leaves varying from narrowly lanceolate to almost ovate. Stem prickly below.

196. *COOPERIA DRUMMONDII*, *Herbert*. Dry prairies from Galveston to the Brazos; flowering from June to November, but mostly in July, and only after heavy rains.

197. *ALETIS AUREA*, *Walt*. Houston. April.

198. *SCILLA* (Kamassa, sed perigonium regulare) *ANGUSTA* (*n. sp.*): *gracilis*; foliis linearibus apice longe attenuato-setaceis flaccidis scapo brevioribus; bracteis e basi lanceolata membranacea subulatis pedicellos erecto-patentes subæquantibus; alabastris oblongo-linearibus; foliolis perigonii linearibus obtusis stamina duplo superantibus. — Open woods and prairies, in south-western Missouri and Arkansas, as well as Texas: flowering from April to May in Texas, but from May to the middle of June in Missouri and Arkansas, when *S. esculenta*, growing in the same region, has matured its seeds. The present plant is more slender than *S. esculenta*, with narrower leaves, sepals, etc.; but perhaps it is only a variety. — We are slow to believe that the Oregon species belongs to a different genus from the eastern.

199. *ALLIUM MUTABILE*, *Michx*. Dry open woods, Houston. April. The capsule, in all our specimens, is one-seeded; the flowers usually rose-red, but sometimes white.

200. *RUPPIA MARITIMA*, *Linn*. Salt water ponds, Galveston Island.

201. *CYPERUS VEGETUS*, *Linn*. Wet prairies. May.

202. *C. OVULARIS*, *Torr*. In dry and wet places. April to June.

203. *C. TETRAGONUS*, *Ell*. Dry prairies near Houston. May and June. Style 3-cleft.

204. *FUIRENA HISPIDA*, *Ell*. Springy places west of the Brazos. August.

205. *ELEOCHARIS ARENICOLA*, (*Torr. MSS.*): culmis subspithamæis compressis sulcatis e rhizomate repente prælongo;

spicis ovatis obtusis multifloris; squamis rufescentibus membranaceis obtusis margine scariosis; stylo trifido; achenio obovato compresso triangulari opaco tuberculo distincto rostrato acuto multum majore setas 6 tenues subexcedente. — Galveston Island, May, creeping in the loose sand. (Also along the southern coast of the United States.)

206. *SCIRPUS LACUSTRIS*, *Linn.* Galveston. May.¹

207. *SPARTINA JUNCIFORMIS* (*n. sp.*): humilis (1–2 pedalis); foliis convolutis angustis, caulinis paucis brevibus, radicalibus cæspitosis culmum subæquantibus; spicis 8–10 oblongis sessilibus ad rachin læviusculam adpressis; carina glumarum longitudine subæqualium paleæque inferioris ciliato-hispida. Saline prairies near the coast. May. — Plant with the foliage and much the aspect of *S. juncea*; but with the spikes and flowers different from that species, as well as from *S. lævigata*. A few specimens of a taller variety were collected in July.

208. *KÆLERIA TRUNCATA*, *Torr.* Woods, Houston. May.

209. *UNIOLA GRACILIS*, *Michx.* Variety with broad and hairy leaves, the florets undeveloped. Houston. June.

210. *PANICUM (ORTHOPOGON) HIRTELLUM*, *Michx.* Houston. June.

211. *ANDROPOGON AVENACEUS*, *Michx.* Houston. Sept.

¹ I wish to subjoin the character of a remarkable *Scirpus*, which has been discovered this season, near Providence, Rhode Island, by Mr. Olney (the author of a *Catalogue of Rhode Island Plants*, 1845,) whose name I am desirous it should bear.

SCIRPUS OLNEYI (*n. sp. A. Gr.*): culmis triquetro-alatis 2-7-pedalibus aphyllis basi vaginatis sub apice triangulari-subulato brevi capitulam sessilem, e spicis 6-12 ovato-oblongis, gerentibus; squamis orbiculatis mucronatis; antheris apice barbularis; stylo bifido; setis 6 retrorsum hispidulis achenium obovatum plano-convexum gibbosum apiculatum vix æquantibus. — In a salt marsh on the Seekonk river, Rhode Island, *Mr. S. T. Olney*. This species is most allied to *S. pungens*, *Vahl*, (*S. Americanus*, *Pers.*) from which it is especially distinguished by its remarkably 3-winged stem. The reëntering angles are so deep that the cross section presents the appearance of three rays, or plates with parallel sides, joined at a common centre. This species has just been detected on the coast of New Jersey by that very assiduous botanist, Dr. Knieskern, from whose specimens I have added the characters of the achenium; as the fruit has failed to ripen this year in the Rhode Island plant.

212. *LEPTOCHLOA MUCRONATA*, *Kunth.* August.

213. *POA* (*ERAGROSTIS*) *CAPITATA*, *Nutt. in Trans. Amer. Phil. Soc. (N. Ser.)* V. p. 147; the submasculine plant; and

214. 'The subfeminine plant of the same species, which has the spikelets much less crowded. Sandy places in the Brazos bottom. July.

COLLECTION SECOND, 1844.

Mr. Lindheimer's Collection of 1844, was made between the Brazos near San Felipe, and the Colorado River, in the neighborhood of Cat Spring of Mill Creek, the settlement of Industry, and thence westward towards the Colorado, and along its bottom lands. The prairies are partly of a light and even sterile sandy soil, and partly of a stiff clayey soil. The bottom lands consist of a stiff black soil. Near Industry, and on the Colorado, rocks of a secondary sandstone (probably a subcretaceous formation) appear, on which several species of Cactus are found. In the prairies ant-hills are not uncommon, and on old and deserted ones a rich harvest of peculiar plants may be made. The numbers run on consecutively from the end of the former year's collection. Additional specimens of the following plants of that collection, gathered again in 1844, are distributed to subscribers (without being reckoned) under their former numbers, namely: No. 7. *Cocculus Carolinus*, *DC.*, in fruit. — 8. *Streptanthus hyacinthoides*, *Hook.*, with linear leaves; the flowers nodding, the long siliques erect. — 18. *Paronychia Drummondii*; handsome specimens, gathered in May, just coming into flower. — 24. *Sida Lindheimeri*, *nob.*; specimens in finer state than before. — 29. *Rhynchosia minima*. — 39. *Dalea aurea*. — 40. *Petalostemon obovatum*. Root ligneous, perennial. The spikes, which are an inch in diameter, are at length prolonged to the length of six or eight inches. — 49. *Acacia hirta*, with ripe pods. — 51. *Acacia Farnesiana*; on the Brazos, &c. Undoubtedly indigenous, flowering in March. — 55. *Cenothera*

speciosa. — 60. *Gaura sinuata*. — 80. *Gutierrezia Texana*. — 83. *Solidago leptcephala*. — 94. *Echinacea angustifolia*. — 96. *Helianthus cucumerifolius*. — 104. *Gaillardia amblyodon*. — 107. *Hymenopappus artemisiæfolius*; with the leaves, as usual, extremely variable; some of them occasionally obovate-lanceolate, and perfectly entire. — 110. *Marshallia cæpitosa*; growing in scattered plants on the dry prairies near the Mill Creek. — 137. *Herpestis cuneifolia*, in fruit. — 138. *Buchnera Americana* β . *parviflora*, in flower. — 145. *Salvia azurea*. — 153. *Monarda aristata*, which in the inland parts of Texas appears to take the place of *M. punctata* near the coast. — 161. *Utricularia subulata*. — 167. *Eriogonum longifolium* β . *plantagineum*. — 169. *Stillingia sylvatica*, in fruit. — 174. *Euphorbia bicolor*. — 175. *Aphora mercurialina*, in flower. — 184. *Commelyna angustifolia*. — 199. *Allium mutabile*. Shady moist places on Mill Creek. April, May. Larger specimens than those gathered in 1843, near Houston, 12 to 20 inches high, the umbel not bulbiferous. Ovary with a crown of three scales, which disappear as the capsule ripens, (in this respect unlike *A. stellatum* and *A. reticulatum*,) 6-ovuled; the capsule 1-3-seeded. — 189. *Eustylis purpurea*: rather common between the Brazos and the Colorado. April — August. — 198. *Scilla angusta*, *nob.* Dry prairies west of the Brazos. April.

215. *BRASENIA PELTATA*, *Pursh*. Specimens in fine fruit, gathered in July in clear rivulets between the Brazos and the Colorado.

216. *DRABA CUNEIFOLIA*, *Nutt. in Torr. & Gr. Fl. I.* 108. Dry grassy places, March. — In some specimens the silicles are almost, if not quite, glabrous. *D. micrantha*, *Nutt.*, which differs only in the like respect from *D. Caroliniana*, is probably therefore a mere variety of that species.

217. *VESICARIA AURICULATA* (*n. sp.*): annua, caulibus decumbentibus canescenti-hirsutis; foliis sparsim pilosis, infimis lyrato-pinnatifidis sinuato-dentatisve basi attenuatis, cæteris ovato-lanceolatis basi cordato-auriculata sessilibus vel semi-

amplexicaulibus repando-dentatis subintegrisve ; petalis obovato-spathulatis sepala pilosa colorata subduplo superantibus ; filamentis e basi inflata abrupte subulatis ; antheris linearibus ; ovarii loculis 3-4-ovulatis ; stylo cum stigmate globoso siliculis vix stipitatis globosis glabris brevioribus ; seminibus subsex marginatis. — Dry prairies near San Felipe. Feb. — March.

218. *NASTURTIIUM TANACETIFOLIUM*, *Hook. & Arn.* Sandy bottoms. February and March. — Siliques sometimes spreading or even reflexed : in other cases considerably incurved and erect.

219. *SISYMBRIUM CANESCENS*, *Nutt.* A very canescent form. April — May.

220. *POLYGALA ALBA*, *Nutt.* (*P. Beyrichii*, *Torr. & Gr.*) Prairies. April — May. Lower leaves sometimes obovate-spatulate.

221. *HYPERICUM MACULATUM*, *Walt., Torr. & Gr.* Margin of woods from Galveston to the Colorado. May.

222. *PARONYCHIA DICHOTOMA*, *Nutt.* Sandstone rocks near Industry. Sept. — Oct.

223. *ARENARIA PITCHERI*, *Nutt.* Prairies. March. Petals emarginate.

224. *PTELEA TRIFOLATA*, *β. mollis*, *Torr. & Gr. Fl. I. p. 680.* Along water-courses. Houston to the Colorado. April.

225. *ÆSCULUS PAVIA*, *β. DISCOLOR*, *Torr. & Gr.* Thickets along the banks of Mill creek. March.

226. *SAPINDUS MARGINATUS*, *Willd.* Popularly called "Wild China-tree," forming trunks about a foot in diameter, in fertile woods. The specimens with ripe fruit were gathered in August.

227. *RHAMNUS CAROLINIANUS*, *Walt.* Small trees forming thickets in wet places on the prairie west of San Felipe ; flowering in May. With it there is a small-leaved variety, with the flowers more crowded, &c.

228. *R. LANCEOLATUS*, *Pursh.* Thickets. March.

229. *TEPHROSIA ONOBRYCHOIDES*, *Nutt.* ; with short and rusty pubescence, &c., differing somewhat from the variety distributed under No. 32. West of San Felipe. May.

230. *ASTRAGALUS CARYOCARPUS*, *Ker.* Prairies west of San Felipe. April.

231. *LUPINUS SUBCARNOSUS*, *Hook.* Prairies. April. Plant 5 to 15 inches high, branching from the base, with rather smaller and paler flowers and more silky or woolly inflorescence than the nearly related *L. Texensis*,—of which a few specimens were intermixed in the collection.

232. *CASSIA CHAMÆCRISTA*, var. *CINEREA*, *Torr. & Gr.* Sandy places in woods along the Colorado. August. The leaves bear setaceous glands between the 4 to 6 lower pairs of leaflets; the gland below the lowest pair is stipitate; and the 5 alternate anthers are shorter.

233. *ALGAROBIA GLANDULOSA*, *Torr. & Gr. Fl. I. p. 399.* "This shrub, or small tree, about 10 feet high, with a stem 6–8 inches in diameter, either grows sparsely or forms thickets in the low prairies. It is called *musket-tree* by the Texans. It is first found as a low shrub on the San Bernardo prairie, west of San Felipe, but becomes larger and more frequent westwardly, giving a new character to the vegetation, as in the *musket-thickets* on the Colorado, along the borders of which several Cacti, hereafter enumerated, are abundantly met with. It ripens its pods at the end of August." *Lindheimer*.—The leaflets vary, often on the same specimen, from narrow linear to oblong, and even broadly elliptical. Lindheimer's specimens are some of them in fine fruit, showing that the species is totally distinct from *A. dulcis*, (of which Bentham conjectured it might perhaps be a variety,) and also presenting some peculiarities that call for more particular remark. The mature legumes are from 5 to 7 inches long, raised on a stipe which is often an inch in length: they are narrowly linear, more or less curved or falcate, very slightly compressed, strongly torose, and from 9 to 20-seeded: the epicarp is chartaceo-membranaceous, and contains a considerable quantity of sweet farinaceous pulp which surrounds the seeds, or rather the coriaceous investment in which the seeds are singly contained. For each seed is enclosed in a distinct and almost

bony almond-shaped *putamen*, derived, we suppose, from the endocarp or lining of the carpel, though, for the want of young pods, we are unable to trace its formation. But in the ripe legume, these several husks, which are perfectly closed, are entirely unconnected with each other. They are placed obliquely in the pod, of which they occupy nearly the whole breadth. The flattened, oval seeds (about 3 lines long) do not fill the cavity. On examining an *Algarobo* pod from South America (the fruit, as we presume, of *A. dulcis*), we find that the seeds are invested by a similar covering, only that it is much thinner and paper-like, and apparently does not separate spontaneously from the pulp. We have not seen the fruit of *Prosopis spicigera*; but we hope that this character may help to sustain the genus *Algarobia*, which, after having been separated from *Prosopis* by Mr. Benthams, has since, by the same author, been again reduced to a section of that genus. Our own species, however, would still have to be distinguished subgenerically from the typical *Algarobia* thus. § **PLEOPYRENA**. Legumen lineare, subteres, torosum, polyspermum; seminibus singulis in nucleo endocarpico coriaceo inter pulpam nidulante clausis. — In a species of **STROMBOCARPA**, collected by Capt. Fremont, (the curious fruit of which should separate it generically from *Algarobia*), this papery lining is continuous, or merely collapsed where the seeds are deficient.

234. *SCHRANKIA ANGUSTATA*, Torr. & Gr. l. c. May — August.

235. *DESMANTHUS BRACHYLOBUS*, Benth. (Darlingtonia, DC.); the var. *glandulosa*, Torr. & Gr. under *Darlingtonia*; — fruiting specimens, collected in July.

236. *PRUNUS GLANDULOSA*, Hook.; Torr. & Gr. l. c. “Low shrubs on sandy hills west of the Brazos, flowering in February. Fruit yellowish-red, as large as a middle-sized cherry.” *Lindheimer*. It is probably a *Prunus*, therefore, but the half-grown fruit upon one of our specimens is juiceless, and still clothed with the tomentum of the ovary.

237. *P. GRACILIS* (n. sp.); ramis subinermibus; foliis lan-

ceolato-oblongis vel ovato-lanceolatis utrinque acutis grosse serratis (serraturis plerumque patentibus mucronulatis eglandulosis) supra puberulis subtus cum petiolis brevibus eglandulosis tomentoso-pubescentibus; stipulis setaceis glanduliferis petiolum æquantibus; umbellulis 2-3-floris; pedicellis calycibusque (laciniis ovatis obtusiusculis) pubescentibus; petalis orbiculatis; ovario glabro. — *P. Chicasa* β ? *normalis*, *Torr. & Gr. Fl. I.* p. 467. Open *post-oak* woods west of the Brazos, where it is called *Post-Oak Plum*. A low shrub, with leaves only one to two inches long. Doubtless a distinct species, which should stand between *P. Chicasa* and *P. glandulosa*.

238. *CENOTHERA SERRULATA*, δ . *SPINULOSA*, *Torr. & Gr.* An unusually large-flowered form; the petals an inch in length. Sandy, dry, or moist prairies. May — June.

239. *GAURA LONGIFLORA* (*Spach*): *elata*, pilis brevibus undique canescenti-puberula; caule erecto paniculato-ramosissimo; foliis lanceolatis lineari-lanceolatisve utrinque angustatis mucronato-acuminatis, sparsim repando-denticulatis, rameis multo minoribus linearibus integerrimis; spicis ramosis laxi-floris; bracteis linearibus deciduis; calycis segmentis tubum plerumque superantibus; petalis spathulatis longe unguiculatis calyce et staminibus brevioribus; nuce sessili ovata canescente 4-carinata nervis 4 intermediis leviter notata. — *G. exaltata*, *Engel. MSS.* *G. biennis*, β . *Pitcheri*, *Torr. & Gr. Fl. I.* p. 517. — Prairies at the margin of woods between the Brazos and the Colorado, &c., where it often exclusively covers large spaces of ground; flowering in August and September. Plant taller and much more branching than *G. biennis* (6-9 feet high) with narrower leaves, smaller flowers (the petals turning from white to reddish,) and much smaller and, when ripe, rounder fruit. The *G. filipes*, β . *major*, *Torr. & Gr. l. c.*, is confused with this species. *Spach* described from an imperfect specimen collected in Louisiana, by *Drummond*. The specific name has no particular applicability.

240. *G. DRUMMONDII*, *Torr. & Gr. l. c.* Dry banks and road sides. Canescently pubescent; the leaves often sinuate-

toothed, calyx-segments longer than the tube. Petals deep red in the dried specimens.

241. *G. PARVIFLORA*, *Dougl.* Sandy prairies, &c. July—August. Ovaries and fruit clothed with a close, soft pubescence.

242. *STENOSIPHON VIRGATUS*, *Spach.* High prairies on the Colorado, and on rocky soil.

243. *JUSSIEA OCCIDENTALIS*, *Nutt.* Along rivulets. July. Petals obcordate.

244. *OPUNTIA FRAGILIS*, *Nutt.*, var. *FRUTESCENS.* (*O. frutescens*, *Engel. MSS.*) Near the *Musket-thickets*, (vide No. 233,) on the Colorado; often acquiring the height of four or five feet, with a branching ligneous stem, covered with light gray bark, and sometimes with lichens. It bears bunches of small capillary spines, with one larger one (4–5 lines long;) these disappear from the older stems. The wood is hard and close-grained. The younger branches are green and terete, (or angular when withered,) and bear the ultimate articulations, which are about an inch long, and very easily break off. These bear when young, like other *Opuntia*, short terete subulate leaves, with a single spine in their axils, and above this a bunch of small ones. The specimens are not in flower, but are covered with the obovate umbilicate scarlet fruits, which are about eight lines long, fleshy, but not juicy, and contain very few (2–5) white, compressed seeds. What is most remarkable, these fruits are often proliferous, and bear from one to four or five new branches from the upper bunches of spines. The fruit either falls off with these branches, or else dries up, persists and finally forms part of the stem.¹

¹ Though unable to institute a proper comparison, I have little doubt that this is *O. fragilis* of Nuttall, attaining a fuller growth in that warm region than on the Missouri. The following species, collected in the same localities by Lindheimer, though not in sufficient quantity for distribution, have been studied in a living and (most of them) in a flowering state, by Dr. Engelmann, whose account of them is here appended. Unfortunately, neither Dr. Engelmann nor myself have access to

245. *SEDUM SPARSIFLORUM*, *Nutt.* Naked places in the San Bernardo prairie, between the Brazos and the Colorado. April — May.

any adequate or authentic collection of Cacti, so as to institute the proper comparisons. A. GR.

“Mr. Lindheimer has sent seven other Cacti, mostly in living specimens, namely:

1. *OPUNTIA*, *sp.* without fruit or flower, probably *O. vulgaris*. It attains the height of several feet, with large obovate joints, and a few spines.

2. *O. MISSOURIENSIS*? Perhaps *O. vulgaris*, but very spiny.

3. *MAMMILARIA SIMILIS* (*n. sp.*): *cæspitosa*; axillis tuberculorum juniorum paulo tomentosis demum glabris; tuberculis ovatis supra leviter sulcatis (sulco basin versus subtomentoso) apice spiniferis; spinis (circ. 12) æqualibus rectis radiantibus albidis, junioribus puberulis basique tomento circumdatis; baccis sparsis globosis coccineis. — Sandstone rocks, near Industry. Evidently near *M. simplex*, at least to Nuttall's plant of that name, but *cæspitosa*, forming tufts often a foot in diameter. Flowers not seen. Berries scarlet, of the size of a large pea. Seeds numerous, subglobose, scrobiculate, black, with an elongated white hilum. I have living plants, but they have not yet flowered.

4. *M. SULCATA* (*n. sp.*): *cæspitosa*; tuberculis ovato-oblongis sulco subinde apicem versus prolifero superne exaratis apice spiniferis; spinis rectis radiantibus cinereis e tomento albedo deciduo (in plantis adultis spina centralis subrecurva majore) ortis; floribus centralibus fasciculatis e tomento ortis glaberrimis, tubo brevi; sepalis lanceolatis acuminatis viridi-flavescentibus margine integerrimis; petalis longioribus lanceolatis apicem versus ciliato erosio cuspidatis sordide flavis ad basin intus filamentisque brevibus rubicundis; stylo supra stamina exserto; stigmatibus 7-10 flavis; baccis oblongis virescentibus. — With the preceding. Flowers opening for two or three days, in direct sunshine, two inches or more in diameter. On account of the central flowers, this should form, with *M. vivipara*, a distinct section. From that species it abundantly differs, not only in the color of the flower and the spines, but in the entire and smooth sepals, denticulate petals, &c. [This pretty species has also flowered in the Cambridge Botanic Garden.]

5. *ECHINOCACTUS SETISPINUS* (*n. sp.*): subglobosus, apice retusus; costis plerumque 13 acutis subobliquis; aculeis 15-18 fasciculatis tenuibus flexuosis flavicanti-fuscis, superioribus 3-5 elongatis, 1-3 centralibus longissimis erectis, cæteris radiantibus; floribus minutis solitariis e macula subtomentosa supra fasciculos aculeorum ortis; sepalis in tubum concretis, apicibus liberis late ovatis acuminatis scariosis margine fimbriatis; fructibus; seminibus ovatis nigris opacis minutum tuberculatis. — Musket-thickets, on the Colorado River. Near *E. tenuispinus*, *Link & Otto*, from Brazil. Our specimens are about two inches in diameter, and an inch and a half high, with pretty sharp ribs separated by deep grooves. The longest spines are fifteen lines long. Flowers about five lines long.

6. *E. LINDHEIMERI* (*n. sp.*): hemispherico-depressus, vertice tomentoso; costis 21 verticalibus acutis subundulatis; spinis e cicatrice ovato-lanceolata tomentosa ortis fasciculatis compressis cinereo-rubellis transversim annulato-striatis, exterioribus 6-7 inæqualibus radiantibus subrectis centrali recurvata multo brevioribus; floribus e vertice depresso tomentoso ex axillis fasciculorum spinarum hornotinorum provenientibus confertissimis; sepalis (80-100) in tubum brevem infundibuliformem lanosum coalitis lanceolatis spinoso-aristatis, interioribus margine fimbriatis;

346. *GALIUM VIRGATUM*, *Nutt.* Prairies. April.

247. *DIODIA TRICOCCA*, *Torr. & Gr. Fl.* II. p. 30. Fertile places in the prairie, sixteen miles west of San Felipe. (Also collected by Dr. Wright.) June. Cæspitose, depressed, and very much branched. All the specimens examined are tri-carpellary.

248. *SPIGELIA TEXANA*, *A. DC. Prodr.* IX. p. 5. (*Cælostylis*, *Torr. & Gr.*) Shady woods along the Mill-creek west of San Felipe. July.

249. *ASTER DRUMMONDII*, *Lindl.* Shady, moist woods and thickets. September—October. This species exhibits many varieties, in respect to pubescence, and smoothness or roughness. Among them the *A. urophyllus* and *A. hirtellus* of Lindley, are probably to be identified.

250. *CHÆTOPAPPA ASTEROIDES*, *DC.* Dry prairies. April to July.

petalis (40-50) lineari-oblongis margine fimbriato-laceris apice bifidis aristatis; staminibus numerosissimis æqualibus inclusis e toto tubo ortis stylo compresso brevioribus; stigmatibus irregulariter 14-17-fido.—On deserted ant-hills, near the Colorado River. Often a foot in diameter: our specimens are eight or nine inches in diameter, and four or five inches high. Spines strongly annulate, stout, the larger ones often two inches long. Flowers about two inches in length, twelve or more aggregated in the woolly centre. The petals at the base are scarlet, verging to orange, from which a pale purple or violet midrib extends to the apex, and is prolonged into a delicate bristle of the same color, while the upper part of the petal is pearly white, with feathery margins. The flowers remain for three days, expanding only in bright sunshine.

7. *CEREUS CÆSPITOSUS* (*n. sp.*): ovato-globosus demum cylindricus, apice depresso-umbilicatus; costis sub-15 e tuberculis confluentibus ortis rectis; aculeis numerosis ex areola oblonga albo-tomentosa demum glabrata radiatis nunc recurvis, lateralibus longioribus; floribus ex axillis tuberculorum anni prioris lateralibus; ovario oblongo tuberculis e lana villosa spinigeris stipato; sepalis 40-50 apice spinis setiformibus villosis coronatis virescentibus, intimis lanceolatis acuminato-aristatis glabris coloratis; petalis 30-40 apicem versus ciliato-denticulatis, exterioribus subito acuminatis, interioribus obtusis cuspidatis; staminibus inclusis stylo brevioribus; stigmatibus viridi infundibuliformi 13-partito.—Gravelly soil, near Cat-Spring, west of San Felipe. A singular reduced *Cereus*, quite cæspitose, and even proliferous occasionally, in the manner of *Opuntia*, beginning to flower when only two inches high, and scarcely taller than broad, but attaining the height of at least six inches; the ribs from twelve to seventeen. It is in flower for two days; the flowers about two inches broad when fully expanded. Petals rose-purple. Filaments reddish at the base, yellow at the summit.” *ENGEL.*

251. *BELLIS INTEGRIFOLIA*, *Michx.* A form with smaller heads and fewer rays than usual. Prairies. April — May.

252. *SOLIDAGO ANGUSTIFOLIA*, *Ell., Torr. & Gr. l. c.* Wet prairies (and even on dry soil) and banks of rivulets, very remote from salt water. June — August.

253. *ISOPAPPUS DIVARICATUS*, *Torr. & Gr. Fl. II. p. 239.* Light sandy soil. August — September.

254. *I. HOOKERIANUS*, *Torr. & Gr. l. c.* Sandy prairies and on sandstone rocks on the Colorado. September. The specimens vary from six inches to two feet high; some are simple, others much branched from the base. The rigid leaves are narrowly spatulate-lanceolate; the heads pretty numerous, on short erect peduncles.

255. *GRINDELIA INULOIDES*, *Willd.* Prairies west of San Felipe. July — August. Stem five to six feet high, branching only above.

256. *CALYMMANDRA CANDIDA*, *Torr. & Gr. l. c.* Open woods west of the Brazos. April — May.¹

257. *SILPHIUM SCABERRIMUM*, *Ell.* Woods near Industry. May — July.

258. *HALEA LUDOVICIANA*, *Torr. & Gr. Fl. II. p. 304.* Sandy *post-oak woods*, west of the Brazos. May — August. — Lowest leaves rhombic-ovate, or ovate-lanceolate, acute or acuminate, abruptly contracted into winged petioles, nearly as long as the blades, which are somewhat connate at the base. Exterior involucre with four rather strongly marked salient angles at the junction of the scales, whitish-tomentose inside.

259. *HELIANTHUS LENTICULARIS*, *Dougl.* Low woods and wet prairies. July — August. In rich bottom woods it often attains the height of ten or twelve feet, with the lower leaves six to eight inches broad. Flowers two and a half to three and a half inches in diameter; achenia oval, thicker than is usual in the genus.

¹ *PTEROCAULON VIRGATUM*, *DC.* A few specimens of what appears to be this West Indian species, were gathered near Houston, in open pine woods. September.

260. *H. MAXIMILIANI*, *Schrad.* Prairies, margin of woods and deserted fields; common from Houston to the Colorado, flowering in October and November. Stems four to seven feet high, much branched. Well distinguished by the great and equable cinereous roughness of the stem, and of both surfaces of the lanceolate attenuate-acuminate leaves. It becomes, however, much less rough in cultivation.

261. *H. MAXIMILIANI*, β *ASPERRIMUS*. A variety of the last, as we take it to be, with a simple stem, two to three and a half feet high, bearing solitary or few heads. Prairies between the Brazos and the Colorado, forming large patches. October.

262. *H. GROSSE-SERRATUS*, *Martens*: the same form, with the large leaves silvery-tomentose beneath, which was collected in Texas by Drummond, and which, as it best deserves the specific name, is assumed in *Torr. & Gr. Fl. l. c.* as the type of this variable species. Banks of rivulets and margin of woods. August — October.

263. *H. GROSSE-SERRATUS*, β *Torr. & Gr. Fl. l. c.* A less canescent variety, with the stem, although somewhat glaucous, slightly scabrous throughout. Prairies, &c., with *H. Maximiliani*.

264. *COSMIDIUM FILIFOLIUM*, *Torr. & Gr. Fl. II. p. 350.* Prairies west of the Brazos. May — June. This is really a perennial, and proves quite ornamental in cultivation. It extends as far north as the south-western borders of Missouri.

265. *DYSODIA TAGETOIDES*, *Torr. & Gr. Fl. II. p. 361.* Wet prairies, and on sandstone hills of Mill-creek. August. This is also a perennial. The dots of the leaves are orange-yellow.

266. *PALAFOXIA HOOKERIANA*, *Torr. & Gr. l. c.* Sandy post-oak woods, near Industry. August. We have it in cultivation, from Lindheimer's seeds. The flowers are rose-color or deep flesh-color, and about two inches in diameter; the rays large and conspicuous, but often irregular, and some of them palmate.

267. *ACTINELLA LINEARIFOLIA*, *Torr. & Gr. l. c.* De-

clivity of sandstone hills near Industry. May — June. Rays yellow, turning white when fading.

268 & 269. *SENECIO AMPULLACEUS*, (*Hook.*): annuus vel biennis; caule erecto fistuloso striato superne ramoso; foliis inferioribus obovato-spathulatis in petiolum decurrentibus, superioribus ovato-lanceolatis acutis basi subcordata semiamplexicaulibus, omnibus subintegris vel denticulatis; cyma corymbosa; pedicellis apice demum incrassatis; involucri squamis setaceis paucis calyculato; radiis 7–9; acheniis strigosocanescentibus.

Var. α *GLABERRIMUS* (No. 268): caule foliisque angustioribus subintegerrimis glabris. Wet prairies.

Var. β *FLOCCOSUS* (No. 269): caule foliisque junioribus latoribus cano-floccosis; superioribus e basi latiore acuminate, nunc grosse repando-dentatis. — Sandy prairies in loose, dry soil. April. Both forms are certainly annual or biennial.

270. *LYGODESMIA APHYLLA*, β *TEXANA*, *Torr. & Gr. Fl.* II. p. 485. Prairies. June — July. Roots penetrating deep into the soil. Some of the radical leaves are runcinate-pinnatifid, with subulate lobes.

271. *PYRRHOPAPPUS GRANDIFLORUS*, *Nutt.* Prairies, near San Felipe. April. Perennial; the slender perpendicular root enlarging, at the depth of a few inches, into an oblong tuber, similar to the root of *Cynthia* Dandelion. Scapes several from one root, with or without a bract in the middle.

272. *ASCLEPIAS* (*OTARIA*) *LINDHEIMERI* (*n. sp.*): caudice perpendiculari incrassata caulem herbaceum pubescentem singulum erectum (vel plures adscendentes) emittente; foliis oppositis ovatis obtusis (aut rarius lanceolatis) basi nunc subcordatis breviter petiolatis utrinque puberulis; pedunculis brevissimis lateralibus; pedicellis gracilibus pubescentibus corollae laciniis acutiusculis subduplo longioribus; cucullis ad apicem sensim dilatatis subtrilobatis; processu bifurco, ramo altero brevi incluso recto, altero longiore incurvo exserto; folliculis ovato-lanceolatis acuminatis puberulis carina exteriori setulis mollibus pl. m. conspersis. — Black, clayey soil, near

Industry. June — August. Also, in Drummond's Texan Collection. Stems six to sixteen inches high, from a very thick perpendicular root. Leaves mostly broadly oval, and obtuse. Flowers large and greenish: calyx pubescent, one-third the length of the corolla. Follicles ovate-lanceolate, and with a long acumination, "8-angled, the angles often somewhat tuberculated; the outer one furnished with soft spines, or a dentated crest." *Lindheimer*. This species is nearly allied to *A. longicornu*, *Benth.*, which we find has a similar gynostegium, only a little more decidedly 3-lobed at the apex, as well as a bifurcated horn, both lobes of which are shorter than in our species. There is also a bifurcated horn in *A. obtusifolia*.

273. *GONOLOBUS CYNANCHOIDES* (*n. sp.*): caulibus pluribus e radice subtuberoso debilibus basi ramosis adscendentibus pilosis; ramis teretibus; foliis inferioribus late ovatis, summis lanceolato-ovatis, omnibus basi cordatis breviter petiolatis subtus præsertim pubescentibus acutiusculis vel acutatis; pedunculis subnullis vel brevissimis bifloris; pedicellis basi subulato-bracteolatis petiolo sublongioribus; corollæ rotati-campanulatæ lobis ovatis obtusis intus glaberrimis (extus parce pilosis) calycis segmenta ovato-oblonga acuta pilosa excedentibus; corona staminea cyathiformi gynostegii basin cingente 5-loba, lobis rotundatis crassiusculis margine tenuiori cinctis, supra processu lineari scaphoideo arcuato instructis; folliculis ovoideis utrinque attenuatis coriaceis muricatis pubescentibus; seminibus (rufis) orbiculatis marginatis comosis. — Sandy soil, in open woods, near Industry. April — June. (Also, No. 190 and 203 of Drummond's second, and 237 of the third Texan collection.) Stems 6 to 15 inches high, diffuse; leaves 1–2 inches long, cordate, with an open sinus, the uppermost sometimes almost truncate at the base. Corolla greenish purple, about two lines in diameter. The fleshy lobes of the cup-shaped coronæ are furnished in the middle with a small process, which is connected at the base with the mid-nerve of the anther, and is free and incurved at the obtuse point, the

upper surface of which is excavated. The membranaceous cusps of the anther are triangular acute, and partly cover the very obtusely 5-angular and somewhat convex stigma. The small horizontal pollen-masses are oblong, slightly curved, and scarcely attenuated at the exterior (attached) end. — From the description, there can be little doubt that this plant is a congener of *Chthamalia biflora*, and *C. pubiflora*, *Decaisne*, in *DC. prodr.*, from which it differs in the glabrous corolla, etc.; but surely it cannot be separated from *Gonolobus*, as that genus is left by *Decaisne*. The corona of *Gonolobus*, characterized as “annuliformis undulato-lobata, lobis integris prominentibus,” exhibits great diversities in the admitted species, from the proper annular and 5-lobed crown of *G. lævis*, to the campanulate one, with 10 long subulate and 5 short triangular teeth, of *G. macrophyllus* and *G. hirsutus*.

274. *EUSTOMA RUSSELLIANUM*, *Don, Griseb.* Clayey, wet prairies. July — August.

275. *PHLOX DRUMMONDII*, *Hook.* Sandy soil, near water courses.

276. *CONVOLVULUS (STYLISMA) PICKERINGII*, *Torr.* Dry, sandy prairies. May — July. — Specifically distinct, we suspect, from the *C. tenellus*, *Lam.* to which *Choisy* joins it.¹

277. *CUSCUTA CUSPIDATA* β . Vide No. 125, supra. Bottom lands of the Colorado River. August.

278. *LITHOSPERMUM BREVIFLORUM* (*n. sp.*): caulibus solitariis, vel plurimis e radice nigro-purpurea fusiformi erectis apice ramosis, foliisque linearibus lineari-lanceolatisve margine revolutis utrinque strigoso-canescens; floribus subpedicellatis; corolla calycis laciniis lineares strigosas vix æquante fauce exannulata, lobis erectis (an semper?) minutissime crenulatis; nucibus albidis nitidis ovatis acutis, intus acute

¹ The collection also comprises a few specimens of *Convolvulus hastatus*, *Nutt.* in *Trans. Am. Phil. Soc. (n. ser.)*, V. p. 174: which name, being several times pre-occupied, we propose for it the name of *C. LOBATUS*. Sandstone rocks, near Industry. May, June. Stems prostrate, 8-4 feet long. Flowers rather small, white. Dr. Wright has also sent it from the Colorado.

carinatis et impresso-punctatis. — *L. Mandanense*, *Torr. in Nicollet, Rep.* p. 155, non *Hook.* — Clayey prairies, near Industry. April, May. A foot high. Leaves rather scabrous above, almost exactly like those of *L. longiflorum* (*L. incisum, Lehm.*); the radical somewhat oblanceolate. Lobes of the corolla hirsute on the outside. Except the flowers, the plant has wholly the aspect of *L. longiflorum*; but the corolla is shorter than in *L. Mandanense*, and entirely destitute of the appendages in the throat, unless their rudiments may be obscurely discerned in the sinuses, *not opposite* the lobes of the corolla.

279. *EUTOCA STRICTIFLORA* (*n. sp.*): cinereo-hirsuta; caulibus plurimis simplicibus e radice annua adscendentibus; foliis pinnatifidis lanceolato-oblongis (seu primordialibus integris obovatis), inferioribus in petiolum attenuatis lobis brevibus obtusis, superioribus sessilibus lobis lanceolatis acutiusculis; racemis terminalibus multifloris elongatis arcte secundis, fructiferis strictis; calycis laciniis spathulato-linearibus, fructiferis erectis auctis pedicello appresso parum longioribus; corolla late campanulata calyce sesquiflorioribus, tubo obscure 10-squamigero; filamentis pilosiusculis inclusis; ovario 14–20-ovulato; capsula plerumque 12-sperma. — Sandy soil on the banks of the Brazos near San Felipe. March. A span high; the whole plant almost hoary with a hirsute pubescence. Radical leaves with about 5, the upper cauline with 2 or 3 pairs of lobes. The erect calyx-segments as well as the pedicels give the crowded racemes in fruit a very stiff and strict appearance. Corolla apparently blue, a little hairy externally; the margin very obscurely erose-crenulate; the tube furnished at the base with 5 pairs of linear and narrow appendages which are adherent by the whole margin, so as to form 5 rather inconspicuous grooves which alternate with the stamens. The corolla is almost an inch in diameter in Lindheimer's specimens. The same species occurs in Drummond's Collection (3. No. 298) apparently with smaller flowers.

280. *E. PATULIFLORA* (*n. sp.*): pubescens, subcinerea; caulibus e radice annua diffusis ramosis; foliis spathulato-

oblongis obovatisve membranaceis pinnatifido-dentatis vel incis basi angustatis sessilibus vel infimis petiolatis, dentibus subovatis obtusis; racemis terminalibus simplicibus secundis; calycis laciniis oblongis, fructiferis subspathulatis patulis pedicello filiformi patente seu reflexo multum brevioribus; corolla late campanulata calycem parum excedentibus, tubo obscure 10-squamigero; filamentis pilosiusculis inclusis; ovario 14-16-ovulato; capsula circiter 12-sperma. — Woods near San Felipe. March — April. Stems 6 to 12 inches long, often decumbent. Whole plant with somewhat the habit of *Eutoca viscida*, but not glandular. Leaves 1 to 2 inches long. Racemes lax; the spreading pedicels an inch long in fruit. Corolla much smaller than in the foregoing species, deep blue, yellow at the base; the margin of the lobes somewhat crose; the 5 pairs of very small squamellæ also as in *E. strictiflora*. — We can discern the obscure rudiments of the tubal appendages in the corolla of *Eutoca viscida*. In *E. hirsuta* (Phacelia, Nutt.) No. 134 of this collection, they are very narrow but are distinctly visible under the microscope; as also in the nearly allied *E. parviflora*. Hence we should have no hesitation in restoring the genus *Cosmanthus* of Nolte and Alph. DC. to *Eutoca* and *Phacelia*.¹

281. SOLANUM MAMMOSUM, *Linn. ??* Road-sides in prairies between the Brazos and the Colorado. June. A stout branching perennial, with broader, more canescent and lobed leaves than *S. Carolinense*.

282. PENTSTEMON MURRAYANUM, *Hook. Bot. Mag. t. 3472*. Dry sandy soil in open woods west of the Brazos. May — June. The splendid flame-colored flowers, with a scarlet border, form a pleasing contrast with the bluish glaucous leaves. Pedicels erect, the flowers horizontal.

283. GRATIOLA SPHEROCARPA, *Ell.* Along ponds and riv-

¹ EUTOCA GLABRA = *Phacelia glabra*, Nutt. *l. c.* Of this a very few specimens were collected by Lindheimer. Fine specimens in fruit exist in Drummond's Texan Coll. III. No. 302. The capsule is about 6-seeded. The calyx-segments in fruit become ovate-lanceolate or oblong.

ulets, flowering from February to April, and also through the summer.

284. *CASTILLEJA INDIVISA* (Engel. MSS.): "piloso-hispida; foliis integris lineari-lanceolatis acutis basi pleraque rotundatis, floralibus apice ovato- vel obovato-dilatatis coloratis; spica demum elongata; calycis lobis late obovatis apice coloratis truncatis retusisve corolla paulo vel vix longioribus. — Valde affinis quoad flores *C. coccineæ*, et quoad folia *C. lithospermifoliæ*, ab illa imprimis foliis indivisis, ab hac statura sæpius elatiore differt, foliis acutioribus et capsulis majoribus." *Benth. in DC. prodr. ined.* — Prairies from Houston to the Colorado: March to June. Also collected by Drummond and Berlandier.

285. *HEDEOMA DRUMMONDII*, *Benth.*: but the verticillastri are only about 3-flowered, and the corolla is long and much exserted. Yet it is certainly the same species as Nos. 276 and 278 of Drummond's Third Texan Collection. — Sandstone rocks near Industry. July. The whole plant has the taste and odor of lemon-peel.

The two following Labiate plants, upon which Dr. Engelmann proposes to establish two new genera, viz., No. 286. *Stachyastrum* (so called from the resemblance of the plant to *Stachys* in habit); and 287. *Brazoria* (from the habitat on the river Brazos,) we think may, notwithstanding minor differences, be properly associated in a single genus, which will be well distinguished from *Physostegia* by the inflated bilabiate calyx which becomes closed in fruit by the inflexion of the lower lip. The genus should perhaps be referred to the tribe *Scutellarineæ* rather than *Stachydeæ*. It may be thus characterized.

BRAZORIA, *Gen. nov.*

Calyx late campanulatus, bilabiatus (labio superiore breviter 3-lobo, inferiore 2-lobo) per anthesin inflatus, post anthesin e surrectione labii inferioris clausus, indistincte nervosus, reticulato-venosus. Corolla tubo longe exserto, fauce inflata; limbi

bilabiati labio superiore erecto subgaleato breviter bilobo vel integro, inferiore profunde trifido, lobis rotundatis patentibus seu recurvis. Stamina 4, sub labio superiore adscendentia : filamenta supra medium corollæ adnata, ubi pilosa, inferioribus eminentibus : antheræ approximatae ; loculis distinctis divaricantibus ad rimam pl. m. ciliatis. Stylus glaber apice æqualiter bifidus, lobis subulatis. Achenia sicca. — Herbæ annuæ, Texanæ, facie foliis et inflorescentia *Physostegia*. Corolla incarnata, fauce luteola.

§ 1. *EUBRAZORIA*. Calycis lobi latissimi, truncati, subæquales, mucronato-denticulati : corolla majuscula tubo prope basin piloso-annulato ; fauce infra labium inferiorem intrusa quodammodo palatum efficiente ; lobis omnibus eroso-crenulatis, iisdem labii inferioris æqualibus, apice bilobis : achenia triangulata, pubera.

286. *BRAZORIA TRUNCATA* = *Physostegia truncata*, *Benth. Lab.* p. 505 ; *Hook. Bot. Mag.* t. 3494. — Sandy soil on deserted ant-hills, &c., in the prairies along the Brazos : May — June. It was first collected by Drummond (No. 274 of the Third Collection) ; and has since been gathered on the Colorado by Dr. Wright. Stem pubescent, scarcely a foot high. Spike dense. Calyx hairy at the base, especially after flowering. Flowers nearly as large as in *Physostegia Virginiana* : the tube of the corolla spotted with purple. The lobes of the lower lip of the calyx are usually merely mucronulate in the middle ; those of the upper are erose-denticulate with mucronulate teeth. In fruit the achenia are contained in a gibbous cavity belonging to the upper side of the calyx : this is closed by the inflexion of the lower lip, which is appressed to the face of the upper, or partly wrapped around it ; so that the fructiferous calyx is flat on the lower side, and very gibbous at the base of the upper side.

§ 2. *STACHYASTRUM*. Calycis sub-7-nervis labium superius latum, lobis rotundatis ; inferius angustum, lobis triangulari-lanceolatis, omnibus cuspidato-mucronatis : corolla exannulata, parvula ; lobo medio labii inferioris cæteris majore,

retuso, marginibus in omnibus fere integerrimis: achenia subglobosa, lævia.

287. *B. SCUTELLARIOIDES*, *n. sp.* — In heavy black soil on the prairies near Cat Spring, west of the Brazos: April, May. The plant was also collected by Drummond, and specimens were distributed, under No. 274, of the Third Collection, mixed with *B. truncata*, which it greatly resembles in habit and foliage. The stem is glabrous, however, though the inflorescence, as well as the calyx, is minutely pubescent. The flowers are scarcely half the size of the preceding: the calyx is more deeply bilabiate, and the lobes, except the middle one of the upper lip, pointed with a rather conspicuous cusp: in fruit the upper lobes are somewhat curved backwards, while the narrow lower lip is incurved, so as nearly to close the orifice. Corolla flesh-color: anthers purplish.

288. *PHYSOSTEGIA INTERMEDIA* = *Dracocephalum intermedium*, *Nutt. in Trans. Amer. Phil. Soc. l. c.* Wet prairies west of San Felipe, growing in patches, — a smaller plant than *P. Virginiana*, with a much more slender spike. The cauline leaves, especially the upper ones, are broadest and cordate at the base, and serrate throughout. Our plant accords with No. 275 of Drummond's Third Texan Collection. No. 274 is a form with acute and more entire leaves, more nearly that described by Nuttall. It is difficult to distinguish the species sufficiently from some forms of *P. Virginiana*.

289. *VERBENA BIPINNATIFIDA* = *Glandularia bipinnatifida*, *Nutt. in Trans. Amer. Phil. Soc. l. c.* Rich prairies, &c. March, April. A plant with more prostrate and radicant sterile stems, more dissected leaves, denser spikes, smaller flowers, shorter calyx, and also more hirsute than *V. Aubletia*.

290. *DIPTERACANTHUS* (§ *MEIOPHANES*, corolla parva caduca, limbo vix expansa) *MICRANTHUS* (*n. sp.*): subglaber, caule erecto ramoso; foliis lanceolato-oblongis subintegerrimis utrinque acutis in petiolum brevem attenuatis, junioribus ciliatis; cymulis paucifloris subsessilibus axillaribus bracteis ovalibus brevioribus; calycis laciniis subulato-lanceolatis piloso-ciliatis corollam inconspicuam capsulamque 8-spermam æquantibus.

—Low woods between the Brazos and the Colorado : June — Sept. Also collected by Drummond (Coll. II. No. 202.) (In similar situations, near St. Louis, *Engelmann*, and Alabama, *Buckley*.)—Plant 1 to 3 feet high, with much the aspect of *D. strepens* in fruit, except that the leaves are narrower (the lower cauline barely ovate-oblong,) or of *D. hybridus* (but nearly glabrous,) but remarkable for its quite inconspicuous flowers. Corolla only about four lines long, whitish, the limb perhaps very rarely expanding, 5-toothed. Filaments conspicuously connate by pairs at the base in a ligula : anthers muticous. Style somewhat hairy : one of the lobes of the stigma abortive, the remaining one subulate. Capsule and seeds as in *D. strepens*, &c.¹

291. DIANTHERA AMERICANA, *Linn.* Creeks of the Colorado ; July — Aug.—Seeds destitute of the mucilaginous coating, and appressed hairs of *Dipteracanthus*, &c.

¹ There are two other well-marked new species of *Dipteracanthus* (*Ruellia*) in Drummond's Texan Collection, viz.

D. DRUMMONDII (*Torr. & Gr. MSS.*) : cinereo-pubescent et pilis mollibus hirsuta ; caulibus e basi ramosis adscendentibus ; foliis oblongo-lanceolatis obtusiusculis sæpe repandis arcte sessilibus ; floribus in axillis subsolitariis breviter pedunculatis vel subsessilibus ; bracteis lanceolatis ; calycis laciniis filiformibus hirtis tubo corollæ infundibuliformis multum brevioribus capsulam clavato-ovoideam 4-spermam excedentibus. — Stems 6 to 20 inches high. Leaves $1\frac{1}{2}$ –2 inches long, somewhat erect, about the length of the internodes, or the upper more approximate usually very obtuse at the base. Corolla $2\frac{1}{2}$ inches long, the slender tube finely infundibuliform at the summit. Anthers muticous. — Var. α . Tex. Drum. Coll. II. No. 220, and III. No. 258. β . Very hirsute and more branched. Coll. II. No. 219.

D. (CALOPHANES) LINEARIS (*Torr. & Gr. MSS.*) : humilis, subpubescens ; caulibus e basi lignosa ramosissimis diffusis ; foliis lineari-oblongolatis integriusculis obtusis basi attenuatis subsessilibus ; floribus solitariis geminisve in axillis subsessilibus ; bracteis foliis conformibus calycem subæquantibus ; calycis laciniis hirtis subulato-setaceis tubum corollæ paulo excedentibus capsulam oblongam tetragonam demum quadrivalvem 2–4-spermam superantibus. — Texas, Drummond's Coll. II. No. 178. Also near Columbus, *Dr. Wright*. Stems or branches a span long. Leaves an inch in length. Corolla about as large as in *D. (Calophanes) biflora* or *oblongifolia* ; the tube short, and the limb somewhat bilabiate. The sepals, as in the above-mentioned species, united below into a short tube. Anthers subsagittate, the cells distinctly cuspidate at the base. Stigma single. Capsule somewhat fusiform ; the valves each separating into two through the complete dissepiment. The hairs of the seed are very slender, and marked with extremely delicate rings. — We have not the fruit of the allied *D. biflora* (*Ruellia oblongifolia*, *Michx.*) Perhaps the genus *Calophanes* might be kept apart from *Dipteracanthus*, if, indeed, either be sufficiently distinct from *Ruellia* proper.

A. GR.

292. *UTRICULARIA PERSONATA*, *Le Conte, DC.* Not sufficiently distinguishable from *U. cornuta*. — Wet soil. April.

293. *OXYBAPHUS PILOSA*? = *Alliona ovata*, *Pursh.* *Calyptomenia pilosa*, *Nutt.* — Both bad names, as the stem and leaves are sometimes nearly glabrous, and the leaves are mostly oblong-lanceolate. Prairies west of the Brazos. July, August. Leaves on very short petioles. Involucre 2-flowered. Stamens 4–5, exserted. (Also collected in Texas, by Dr. Wright.)

294. *BOERHAVIA DIFFUSA*, *Willd.* Roadsides and prairies; a common weed. September — October.

295. *RIVINA PORTULACCOIDES*, *Nutt. in Trans, Amer. Phil. Soc. l. c.* Woods and prairies, near Industry. June — October. — A perennial herb, with a ligneous rhizoma.

296. *POLYGONUM CRISTATUM* (*n. sp.*): caule herbaceo volubili angulato-striato; foliis e basi subcordata vel truncata triangularibus acuminatis margine scabris; floribus in axillis foliorum glomeratis seu in spicas foliaceas laxè dispositis; floribus octandris; stigmatibus 3 sessilibus; laciniis perigonii fructiferis tria exterioribus cristato-alatis, alis crenato-incisis; nucibus parvis trigonis nitidis. — Margin of woods, &c. near Industry. July. Near *Polygonum scandens* and *P. dumetorum*, from which it is distinguished by its less cordate and more triangular leaves, and the crenately incised wings of the three outer sepals, in fruit; and also by the smaller nuts, which are just one line in length. In *P. scandens* the nuts are more than a line and a half, in *P. dumetorum* fully two lines long. In the latter the broad wings are undulate and entire. In *P. scandens* they are somewhat crenate, but often one or all three are wanting. In *P. Convolvulus* the wings are wanting, and the nuts are opaque.

297. *ERIGONUM MULTIFLORUM*, *Benth.* Sandy prairies, near Industry. July — October. — The stamens in the fertile flowers are very woolly towards the base.

298. *ARISTOLOCHIA LONGIFLORA* (*n. sp.*): radice filiformi elongata; caule humili adscendente ramoso; foliis longe linearibus utrinque acutissimis subsessilibus glabris; floribus axillaribus pedunculatis basi unibracteatis extus pubescentibus,

limbo e basi-cordata valde producto lineari acuminato tubo angusto multo longiore. — Shady, grassy places near Mill creek. April — July. A remarkable species, with a very long and simple aromatic root, and several weak, decumbent stems branching from the base, about a span high. Leaves three to five inches long, and one to three lines wide; the attenuated limb of the perigonium as long as the leaves. Capsule glabrous.

299. *A. RETICULATA*, *Nutt. in Trans. Amer. Phil. Soc. (N. Ser.)* V. p. 162. Thickets west of the Brazos. May — June. — Root similar in sensible properties to that of *A. serpentaria*, but of coarser fibres; and also used medicinally as a snake-root.

300. *EUPHORBIA HERNIARIOIDES*, *Nutt. l. c.* p. 171. Clayey soil, near Industry. July — September. Also in Mississippi, Missouri, &c. The smallest of our procumbent *Euphorbiæ*; the leaves from a line and a half to two or three lines long, obliquely obtuse or subcordate at the base. Glands of the involucre narrowly petaloid-margined. Cocci smooth and somewhat carinate. Seeds grey marked with reddish, obovate-oblong, obtusely angled, smooth.

301. *E. ARENARIA* (*Nutt. l. c.*): annua, erecto-patula, glabra; foliis oppositis distantibus linearibus integerrimis obtusis mucronatis basi subobliqua acutis breviter petiolatis; stipulis e basi lata subulatis distinctis subintegris; pedicellis petiolos longe superantibus solitariis; appendicibus involucri petaloideis plerumque 4-ovatis subacutis inæqualibus; seminibus obovato-subglobosis lævibus e rubello cinereis. — Sandy places, especially about fresh ant-hills, near Industry; also on sandstone rocks. June — August. Forming large bushy masses, often six feet in circumference, and two feet or more in height. Its slender habit, long and narrow leaves, and conspicuous white flowers, give it somewhat the appearance of a large *Galium*.¹

¹ A remaining species of the stipulate division of this genus is

E. GEYERI, (*Engel. MSS.*): depressa, humilis; foliis oblongis retusis integerrimis glaberrimis; stipulis setaceo-multifidis; involucri appendicibus petaloideis; seminibus minoribus quam in *E. polygonifolia* cinereis. — Beardstown, Illinois, and Upper Missouri, *Geyer*. Near *E. polygonifolia*.

302. *E. ARKANSANA* (*n. sp.*): annua, gracilis, glaberrima; caule erecto ramoso; foliis sparsis spathulato-obovatis apicem versus serrulatis mucronato-acutis sessilibus, inferioribus in petiolum angustatis; umbellis trichotomis bis dichotomis; bracteis rotundatis subcordato-ovatis mucronatis serrulatis; glandulis involucri (aurantiacis,) orbiculatis; capsulis verrucosis; seminibus (brunneis) reticulatis. — Prairies, from Houston to the Colorado. April — July. Also, Fort Gibson, Arkansas, *Engelmann*, and Western Louisiana, *Dr. Hale*. — Plant 8 to 12 inches high, with much the appearance of *E. peploides*, *Nutt.*; which abundantly differs in its entire and retuse leaves, entire and more cordate bracts, smooth capsules and smooth seeds. The seeds and serrulate leaves in our plant are more like *E. Helioscopia* on a small scale, but, besides that ours is much more slender and smaller in all its parts; the broadly-ovate acute bracts are very different.

303. *E. MARGINATA*, β *UOLEUCA*: bracteis oblongis ovali-lanceolatisve acutis, marginibus latissime albidis sæpe pl. m. crispis; ramulis villosis. — Bottom lands of the Colorado. August. — Seeds tuberculate-rugose, as in the ordinary forms of *E. marginata*.

304. *PILINOPHYTUM CAPITATUM*, *Klotzsch*, (cf. No. 171.) Low prairies, on the Colorado. September, October.

305. *HENDECANDRA TEXENSIS*, *Klotzsch in Erichs. Archiv*, (1841) I. p. 252. *Croton muricatum*, *Nutt. in Mem. Amer. Phil. Soc. l. c.* p. 173. Prairies on the Colorado, the sterile and fertile plants generally intermixed, and covering large patches of ground. An annual plant, about three feet high. Leaves often lanceolate-oblong, and half an inch wide; those of the fertile plant greener above than in the sterile, as described by Nuttall, but often wider rather than narrower. Stigmas 20–24. The hypogynous disk orbicular. — *Klotzsch* wrongly describes the stem as suffruticose, and has not noticed the flocciferous soft tuberculi of the capsule, which are as evident in our Drummondian specimens as in those of *Lindheimer*. The *H. multiflora*, *Torr. in Fremont's Report*, 1843, is the same species.

306. *APHORA* (vide No. 175, supra) *HUMILIS* (*n. sp.*): strigoso-pilosa; caulibus basi ramosissimis adscendentibus diffusis; foliis oblongis ovato-lanceolatisve obtusis basi attenuatis brevissime petiolatis superne demum glabratis; capitulis axillaribus folio multum brevioribus paucifloris; petalis in fl. masc. calycem paulo superantibus lanceolatis, in fl. fœmineo subulatis glandulis disci brevioribus. — In hard clayey soil, west of the Brazos. March — August. (Also, Texas, *Drummond*, Collection Second, No. 230, and *Dr. Wright*.) Plant 6 to 8 inches high; the base of the stem ligneous. Leaves an inch or an inch and a half long. The clusters contain one fertile and about four staminate flowers. The fruit and seeds not half the size of those of the two other Texan species; the latter globose and rugose, as in the other species, at first curiously striate-reticulated, but when old more even.

307. *TRAGIA BREVISPICA* (*n. sp.*): multicaulis, ramosa, decumbens; ramis apice flexuosis vel subvolubilibus; foliis e basi cordata truncatave triangulari-lanceolatis (superioribus fere linearibus) irregulariter acute dentatis parce pilosis petiolatis; spicis folio oppositis multo brevioribus; flore fœmineo ad basin unico, masculis paucis; capsulis hispidulis. — Black, clayey soil, in the prairies west of the Brazos. May — July. Differs from *T. urticæfolia* (perhaps not specifically) in the procumbent stems, which often form diffuse tufts two or three feet in diameter, and the smaller and narrower leaves, as well as the short spikes and smaller flowers and fruit; the latter is less hispid.

308. *FORESTIERA ACUMINATA*, *Poir.* Banks of the Brazos, near San Felipe. March. It extends as far north as on the Wabash, in Illinois.¹

309. *QUERCUS CINEREA*, *Michx.* Sandy, hilly soil; forming groves in the prairies west of the Brazos, along with

¹ *ULMUS CRASSIFOLIA*, *Nutt.* was sparingly collected by Lindheimer; the tree was in flower, for the second time, in September. The perigonium is divided to the base into eight linear segments; and the ovary and fruit are villous.

Q. obtusiloba; flowering in February. A small tree, crooked, and much branched; the earliest flowering species in Texas.

310. *POTAMOGETON DIVERSIFOLIUS*, β . *SPICATUS*, *Engel. in Sill. Jour.* 46, p. 102. Clear rivulets, in prairies, west of San Felipe. April. Leaves 5-7-13-nerved.

311. *P. NATANS*, *Linn.*, Var.? *foliis infimis elongato-lanceolatis utrinque acutissimis pellucidis breviter petiolatis, sequentibus longius petiolatis sensim magis oblongis et coriaceis, summis natantibus oblongis ellipticisve; fructibus lenticulari-compressis margine acutiusculis.* — In clear water and pools, west of the Brazos. June. Intermediate in its characters between *P. natans* and *P. fluitans*; and in the absence of the upper leaves, very difficult to distinguish from *P. lucens*.

312. *XYSIS TORTA*, *Smith, Kunth, Enum.* 4, p. IV. (ex char.) Springy places. May. Also, in Drummond's Texan Collection.

313. *SYRINCHIUM MINUS* (*n. sp.*): *pumilum; caule ancipiti ramoso folioso; spatha paulo inæquali flores æquante vel subexcedente; perigonii segmentis (cœruleis) ovatis exterioribus setaceo-mucronatis; capsulis obovati-ovalibus glabris.* — Margin of pools, &c. in the prairie west of San Felipe. April. Distinguished from the other North American species, by the smaller size of the whole plant (3-6 inches high,) the much branched stem, the ovate, not obcordate or emarginate, lobes of the perigonium, and the form of the capsule. Spathe not mucronate, about 4-flowered. Seeds numerous and very small, impressed-dotted, black.

314. *HABRANTHUS TEXANUS*, *Herb.* Low prairies of the Colorado, in black, clayey soil; flowering in September. Perigonium reddish-orange outside, yellow within.

315. *ELEOCHARIS ACICULARIS*, *R. Br.* var. Ponds and pools on Mill Creek. March.

316. *TRIPSACUM CYLINDRICUM*, *Michx.* Prairies. April, May.

317. *ANDROPOGON MACROURUS*, *Michx.* September.

318. *CHARA POLYPHYLLA*, *Michx., A. Braun.* On the

clayey bottom of clear rivulets, in the prairies between the Brazos and Colorado. July, and the whole year round.¹

* * No. 151. *MONARDA LINDHEIMERI* of this enumeration must be the same as *M. SCABRA*, *Beck, in Sill. Jour. X. p. 260*, which name should therefore be adopted.

¹ In addition to the enumeration of the North American *Charæ*, published in Silliman's Journal, Vol. XLVI. p. 92, (January, 1844,) we record the following notices, communicated by Professor Braun:

Mr. Lindheimer has sent from Texas specimens of *Chara flexilis*, Linn. ? (incomplete specimen,) and of *Ch. tenuissima*, Desv. This last, as well as the specimens from Massachusetts, may be distinguished as var. *Americana*; the whorls are less densely glomerate, but more approximate than in the European form.

Chara polyphylla, A. Br., is a very polymorphous plant, occurring in many different forms in America, Asia, and the Sandwich Islands. Professor Braun distinguishes seven subspecies.

a. *Ch. polyphylla Michauxii* (*Ch. polyphylla*, A. Br. in Regensb. Bot. Zeit. 1835, p. 70; *Ch. Michauxii*, A. Br. in Sillim. Journ. l. c. No. 11; *Ch. capillata*, Michaux in herb. Jussieu; *Ch. hailensis*, Turpin, Dict. sc. nat. Atlas.) Ohio, (Michaux, Dr. Frank); Missouri, (Dr. Engelmann); Texas, (Mr. Lindheimer); Hayti, (Turpin, 1796.) This is the stoutest, and also the most northern of all species and subspecies of the remarkable group of *Gymnopodæ*, A. Br. There are five species now known, belonging to this group; and of these *Ch. polyphylla* is the most polymorphous, and widest spread species. — The *Gymnopodæ* are distinguished by having the lowest (often very short) joint of the otherwise coated leaves (commonly called verticillated branchlets) naked, or destitute of the coating.

b. *Ch. polyphylla guadeloupensis*, (*Ch. indica*, Bert.) Guadeloupe, Bertero. More slender, with smaller, more elongated seed vessels (sporangia) and still shorter bracts.

c. *Ch. polyphylla ceylanica*, (*Ch. zeylanica*, Klein in Willd.) Ceylon, Pondicherry, Madras, etc.

d. *Ch. polyphylla javanica*.

e. *Ch. polyphylla Muhlenbergii*, (*Ch. foliosa*, Muhlenb. in Willd.; Sillim. Journ. l. c., p. 93, No. 10.) Pennsylvania, Muhlenberg. Very near subspecies *C. ceylanica*, and distinguished from *a. Michauxii*, by the bracts being much longer than the sporangia, while they are shorter in *Michauxii*.

f. *Ch. polyphylla Humboldtiana*, (*Ch. compressa*, H. B. K.) New Andalusia, Humboldt. A variety with some of the upper joints of the leaves destitute of the coating.

g. *Ch. polyphylla armata*, (*Ch. armata*, Meyen, Reisebesch.) Sandwich Islands, Meyen. Distinguished by the stronger spines, and also mostly naked upper joints and smaller seed vessels.

A second species, distinct from *Ch. polyphylla*, but also belonging to *Gymnopodæ*, has been collected by Dr. Engelmann, in lakes in the bottom lands of the Mississippi, near Saint Louis; it is called by Professor Braun

Ch. sejuncta, a more slender and greener plant than the last, but principally distinguished by the seed vessels (sporangia) and globules (often called anthers) being always found on different joints of the leaves (or branchlets,) never as in most other species, together on the same joint. — Martius has collected the same species in Brazil; the North American form is larger, and more slender, and has bracts shorter than the seeds; and may therefore be called var. *brevibracteata*, and the Brazilian variety, *longibracteata*.

BOSTON

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VOLUME VI.—NO. II.

ART. I.—PLANTÆ LINDHEIMERIANÆ, Part II. *An Account of a Collection of Plants made by F. LINDHEIMER in the Western part of Texas, in the Years 1845–6, and 1847–8, with Critical Remarks, Descriptions of new Species, &c.* By ASA GRAY, M. D.

[The numbers follow on from the end of the former collection, as published in Vol. V. of this Journal, through the collection of 1845–6, and thence to the later collection. Those inclosed in () belong to the collection of 1847–8; for greater convenience in describing them, they are here intercalated. The few numbers in brackets below 319 belong to species which occurred in the former distribution. Those marked with a † in place of a number have not been distributed at all. The orders elaborated by Dr. Engelmann have his name affixed to that of the Order.]

RANUNCULACEÆ.

319. CLEMATIS DRUMMONDII, Torr. & Gray, *Fl.* 1. p. 9. Dry prairies, Comale Spring, &c. June. Cultivated in the Cambridge Botanic Garden, from Texan seeds, this plant climbs extensively, but does not show its blossoms until October. The calyx is yellowish green, tinged with purple.

320. RANUNCULUS REPENS, Linn. var. MACRANTHUS: petalis 7–16; caulibus petiolisque villosissimis. R. macranthus, Scheele in *Linnæa*, 21, p. 585. Sparsely on high, rocky plains, and in patches on damp Muskit (Algarobia) flats, New Braunfels. March.—Mr. Wright has specimens

of the same plant, with the leaves also densely silky-vil-
lous, nearly as much so as in *R. canus*, *Benth. Pl. Hartw.*
No. 1626, from California; indeed, it would seem to belong
to the same species; but the carpels are, as in our *R. repens*,
pointed with a pretty long, straight, or flexuous beak, slen-
derly subulate from a broad base, and not “mucrone valde
recurvo fere circinnato,” as *R. canus* is characterized. My
specimen of the latter exhibits no fruit. The petals are in
some specimens nearly an inch in length; in others no larger
than in ordinary American forms of *R. repens*, into which it
passes by every kind of gradation.

† DELPHINIUM VIRESCENS, *Nutt. Gen.* 2, p. 14; *Torr. & Gr. Fl.* 1. p. 32; floribus albis. Rocky prairies and hills,
Comale Spring. April. The species is very likely to be
considered as only a broader-leaved variety of *D. azureum*.

321. *D. VIRESCENS*, *Nutt.*, var. floribus subcæruleis. Dry
and rocky prairies, and margins of thickets, New Braunfels.
April.

BERBERIDACEÆ.

322. BERBERIS (TRILICINA, *Gray*.) TRIFOLIOLATA, *Mori-
cand, Pl. Nouv. Amer.* p. 113, t. 69. *B. ilicifolia*, *Scheele in
Linnæa*, 21, p. 591, non *Forst.* *B. Rœmeriana*, *Scheele*, l. c.
22, p. 352. High shore of Matagorda Bay. Also common
in the interior of Texas, on Comale Creek, at New Braunfels,
&c. (575.) An evergreen shrub, with few branches, but
with many stems from the same base, often forming large
thickets. It flowers in February and March; and the yellow
blossoms exhale the odor of saffron. The globose berries,
about the size of peas, ripen in May, are red, aromatic, and
acid; they are called “currants” by the inhabitants, and are
used for tarts, &c. This interesting species, which is
remarkable for its palmately trifoliolate leaves, is first men-
tioned in the Appendix to the first volume of the *Flora of
N. America*, as having been gathered by Drummond with-
out flower or fruit. In 1841, it was named and characterized

by Moricand, from flowering specimens which occurred in Berlandier's Texan Collection. We have now fine specimens both in flower and fruit from Mr. Lindheimer's, Mr. Wright's, and from Dr. Gregg's collections; the latter met with it as far south as Buena Vista. I have characterized it as a third section of *Berberis*, in the *Genera Am. Bor.-Cr. Illustrata*, 1. p. 80.

CRUCIFERÆ.

323. *STREPTANTHUS PETIOLARIS*, *Gray, Pl. Fendl.* p. 7. Muskit thickets and shady woods, New Braunfels and San Antonio. March. — All the lower leaves, as well as the base of the stem, are more hairy in my specimen than in those cultivated in the Cambridge Botanic Garden, from seeds taken from Mr. Wright's plant; and the radical leaves are barely lyrate-pinnatifid, and rounded at the summit. From seeds sown in early spring, it flowers and fruits during the summer and autumn.

† *S. BRACTEATUS* (*Gray, Gen. Am. Bor.-Or. Ill.* 1. p. 146, t. 60. fig. 1–3.): *glaberrimus, subglaucus; foliis caulinis auriculato-amplexicaulibus, inferioribus oblongis acutis sæpe repando-dentatis, superioribus cordatis sinu profundo clauso in bracteas cordatas (inferiores florem, summas pedicellum subæquantes) sensim decrescentibus; petalis obovatis purpureis; siliquis angustis prælongis (5½–6 unc.) patentibus subfalcatis.* — At New Braunfels. June. Also gathered by Mr. Wright on sand bars of the Colorado, near Austin, in flower only, in the month of April. The radical leaves are sometimes entire or barely repand-toothed, sometimes incised or even lyrate pinnatisect, with most of the lower segments minute. One of Mr. Wright's specimens is remarkable for having all the lower cauline leaves pinnately parted in this way, and petioled. The sepals are tinged with deep purple; the petals are light purple, with the broad spreading lamina half an inch in length. No ripe pods were gathered. The largest seen are about six inches long, but less than a line wide; the immature seeds are winged. I have no specimens

of *S. obtusifolius* nor of *S. maculatus*, with which last especially our plant should be critically compared. But Dr. Torrey informs me that these species want the bracts, so uncommon in Cruciferæ, and which so conspicuously distinguish *S. bracteatus*.

324. *ERYSIMUM ARKANSANUM*, Nutt. in Torr. & Gr. Fl. 1. p. 94; Gray, Gen. Ill. 1. t. 63. Wooded, rocky banks, &c., Comale Spring, and on the Guadalupe. March, April. — A showy species, with large, deep, golden yellow, and faintly fragrant flowers. It was found on the Rio Grande by Mr. Wright.

325. *VESICARIA ENGELMANII* (Gray, Gen. Am. Bor.-Or. Ill. 1. p. 162, t. 70): perennis, pube lepidoto-stellata argentata; caulibus e caudice sublignoso plurimis simplicibus erectis superne parce foliatis; foliis inferioribus spathulatis seu oblanceolatis rariter repando vel sinuato-dentatis in petiolum attenuatis, superioribus sublinearibus integerrimis; racemo etiam fructifero brevi sæpius corymbiformi; silicula globosa glaberrima breviter stipitata 5—12-sperma (loculis 8-ovulatis) stylo pergracili breviora; seminibus submarginatis; funiculis septo longe adnatis. — Pebbly shore of the Guadalupe, New Braunfels. May. Chiefly with mature fruit. (The same species, apparently, with elliptical and entire radical leaves, was found on the Upper Canadian, by Mr. Gordon.) From Lindheimer's seeds, this handsome and very distinct perennial species is in cultivation in the Cambridge Botanic Garden. It makes a strong, deep root. The clustered, simple stems rise to the height of a span or a foot, are clothed, like the foliage, with a silvery pubescence composed of dense and closely appressed stellar tufts, and are terminated by a short and dense, usually umbelliform, raceme of golden yellow flowers, which are fully as large as those of *V. grandiflora*, the petals being half an inch long. Lower leaves two to three inches in length. The style is one third of an inch in length. I should have adopted Dr. Engelmann's or Lindheimer's name of *V. umbellata*, under which the specimens were sent,

and which is not inappropriate to this form, where the pedicels are as long as the axis of the fruiting raceme, except that, in the cultivated and some wild specimens, the raceme elongates in fruit to the length of three or four inches, as in the succeeding.

(576.) *V. ENGELMANNII*, var. β . *ELATIOR*: racemo fructifero extenso (3 – 4-pollicari). *V. pulchella*, *Kunth & Bouché*, in *Ann. Sci. Nat.* 3-ieme Ser. 2, p. 229 (Apr. 1849,) ex char.

326. *V. ANGUSTIFOLIA*, *Nutt. in Torr. & Gr. Fl.* 1. p. 101. Summit of hills, in large patches, on stony soil, New Braunfels. March, in flower. Accords entirely with the original specimens. What Scheele has taken for this species is evidently *V. recurvata*, at least in part.

327. *V. LINDHEIMERI* (*sp. nov.*): radice crassa perenni; caulibus decumbentibus foliosis cinereis; foliis oblongis argute sinuato- vel laciniato-dentatis imis lyrato-pinnatifidis pube implexa appressissima (e pagina superiore sero subdecidua) argenteo-incanis; racemo fructifero elongato; silicula ovoideo-globosa glaberrima stipite plus duplo stylo subduplo longiore; seminibus immarginatis. — Black, stiff prairie soil on the lower Guadalupe, east of Victoria. February, in flower and fruit. — This appears to be a truly perennial species, and is remarkable for its strongly toothed leaves, as well as for the matted, extremely fine and close-pressed, silvery pubescence which clothes them. The upper surface of the older leaves, however, is merely cinereous with minute and rather sparse stellar down. Petals apparently light yellow, three or four lines long.

328. *V. DENSIFLORA* (*sp. nov.*): annua v. biennis, pube stellata laxa cinerea; caulibus adscendentibus usque ad flores foliosis; foliis oblongo-spathulatis vel oblanceolatis basi attenuatis sæpius repando-denticulatis, radicalibus integris; racemo etiam fructifero denso multifloro, pedicellis erectiusculis; silicula estipitata subdepresso-globosa glaberrima stylo brevior 10 – 16-sperma (loculis 8-ovulatis); seminibus im-

marginatis; funiculis septo longe adnatis.—Prairies near Victoria, on the lower Guadalupe; February, in flower. Gravelly banks of streams, Fredericksburg; May, in fruit (577.) (Also, near Austin, *Mr. Charles Wright*.)—Stems numerous from the same root, rather stout, spreading or ascending, 5 to 10 inches long, leafy to the top. Leaves equally cinereous both sides, as well as the stem and pedicels, with a rather loose stellar pubescence; the cauline an inch or less in length; even the radical undivided and barely repand or repand-denticulate. Flowers bright yellow, smaller by about one third than those of *V. grandiflora*. The remarkably dense raceme becomes in fruit from two to four inches long, often ripening as many as fifty silicles; the lower pedicels usually subtended by leaves. Silicles two lines in diameter, slightly didymous as well as depressed, not strictly sessile on the receptacle as in *V. grandiflora*, but raised on a barely appreciable stipe. Style fully two lines long. Seeds small, not at all margined.—This well-marked species appears to be common in Texas, especially throughout the Western districts. But I do not find that it has yet been described.

† *V. GRANDIFLORA*, *Hook. Bot. Mag.* t. 3464. var. β PINNATIFIDA: foliis radicalibus majoribus interrupte pinnatipartitis segmentis dentatis lobatisve, caulinis sæpe subpinnatifidis.—Prairies east of Victoria; February, in flower. The same form was gathered by *Mr. Wright*.—*V. grandiflora* is well distinguished from all the other species (of which a goodly number are now known in North America) by the unusually short style, the narrowly winged seeds, and the large flowers and pods.

329. *V. ARGYRÆA* (*sp. nov.*): perennis, pube lepidostellata undique argentea; caulibus diffusis v. procumbentibus foliosis; foliis omnibus spathulatis integerrimis vel repando-dentatis; racemo laxifloro, fructifero elongato; pedicellis sæpius patentibus apice sursum curvatis; silicula globosa estipitata glaberrima stylo æquilonga oligosperma (loculis 16–18-ovulatis); seminibus immarginatis.—*V. arctica* var.? *Gray, Pl.*

Fendl. p. 9. — Sandy banks of Green Lake, near Matagorda Bay, and prairies near Victoria; February, in flower and half-grown fruit. Also gathered by Mr. Wright on the Rio Grande, Texas; by Dr. Gregg at Buena Vista, and Dr. Edwards at Monterey, Northern Mexico; and by Fendler at Santa Fe, in flower only. The species assumes a variety of forms, according as it flowers early near the root, or from long procumbent stems. In the first case the pedicels are more upright; in the latter they are spreading and upwardly curved, as mentioned in the specific character. They are sometimes subtended by leaves; and the racemes in Dr. Gregg's specimens are occasionally proliferous. The bright-yellow flowers are about half an inch in diameter. The plant is silvery with crowded, but distinct, appressed, scurfy stellæ.

330. *V. RECURVATA* (*Engelm. ined.*): *tenella*, *pube minuta lepidoto-stellata cinerascens*; *caulibus e radice annua plurimis gracilibus diffusis vel procumbentibus ramosis*; *foliis spathulatis integerrimis aut radicalibus repandis lyratisve, supremis sublineari-oblongis*; *racemis elongatis sparsifloris*; *pedicellis sæpe secundis, fructiferis recurvis*; *silicula vix aut ne vix stipitata globosa glabra oligosperma parva stylo tenui brevior vel subæquali*; *seminibus immarginatis*. — *V. angustifolia*, *Scheele, in Linnæa*, 21, p. 584, non *Nutt.* — Dry and stony or light soil, growing sparsely in the grass, San Antonio and New Braunfels. March, in flower; April and May, in fruit. Also around Austin, *Mr. Charles Wright*. — The most slender species; with diffusely spreading stems, from four to eight inches long, and short, spathulate or oblong-spathulate leaves. The flowers are not larger than those of *V. gracilis*, which it most resembles, and from which it is at once distinguished by its nearly or quite estipitate silicles, pendulous on the recurved pedicels. The pods are a line, or little more, in diameter.

331. *V. GRACILIS*, *Hook, Bot. Mag. t. 3533*. Muskit Flats, in wet or low, grassy places, New Braunfels. April, May. — Stems upright or nearly so, slender, from 8 to 16

inches long. The pods, in the stronger specimens, are twice as large as in Hooker's figure and description.¹

(216.*) DRABA PLATYCARPA, *Torr. & Gr. Fl.* 1. p. 108. This is not the same as No. 216 (*D. cuneifolia*) of the former

¹ VESICARIÆ Boreali-Americanæ Synoptice Dispositæ.

Sect. I. VESICARIANA, DC. Silicula globosa, raro pyriformis, valvis membranaceis inflatis.

§ 1. *Annua seu biennes.*

* *Seminibus marginatis; stylo silicula (stipitata) dimidio vel ultra breviorē; foliis caulinis basi sæpe auriculatis et subamplexicaulibus.*

1. *V. GRANDIFLORA* (*Hook. Bot. Mag.* t. 3464): caulibus pube brevi subcinereis; foliis sæpe sinuato-pinnatifidis dentatisve; stylo silicula 2-3-plo breviorē. *V. brevistyla*, *Torr. & Gr. Fl.* 1. p. 102 (*vide Suppl.* p. 668.) The septum is not veinless, as is said by Don, but has a midnerve stretching from the apex towards the base, as is usual in the genus.

2. *V. AURICULATA* (*Engelm. & Gray, Pl. Lindh.* No. 217, p. 32): caulibus pedunculisque hirsutis; floribus minoribus; stylo silicula dimidio brevioribus.

** *Seminibus immarginatis; stylo silicula subæqualibus aut longioribus; foliis omnibus basi angustatis.*

† *Silicula vix aut ne vix stipitata, globosa.*

‡ *Racemo etiam fructifero densifloro; pedicellis erectiusculis vel subpatentibus.*

3. *V. DENSIFLORA*, (*sp. nov.*) *Vide supra*, No. 328.

4. *V. ANGUSTIFOLIA*, *Nutt. in Torr. & Gr. Fl.* 1. p. 101. *Vide supra*, No. 326.

5. *V. SHORTII*, *Torr. & Gr. Fl.* 1. p. 102. — The silicles, in the specimen of *Herb. Torr.*, the only one I have ever seen, are nearly all sterile and imperfectly grown; hence their small size in proportion to the length of the style. In one pod, however, although remarkably small for the genus, I found a single ripe (marginless) seed, nearly filling the cell; in this case the style was no longer than the silicle. The species, although not sufficiently well known, is unlike any other here enumerated.

‡† *Racemo sparsifloro; siliculis nutantibus.*

6. *V. RECURVATA*, *Engelm.* *Vide supra*, No. 330.

†† *Silicula breviter stipitata obovato-globosa seu pyriformi; foliis caulinis subrepandis.*

7. *V. NUTTALLII* (*Torr. & Gr. Fl.* 1. p. 101): subcinereo-puberula; filamentis basi ampliatis; silicula pyriformi juxta basim constricta.

8. *V. REPANDA* (*Nutt. in Torr. & Gr. l. c.*): glabrata; floribus majoribus; filamentis e basi dilatata sensim angustatis; silicula immatura subglobosi-obovata. — There are no specimens with full-grown silicles, while those of *V. Nuttallii* are altogether fruitful, with no good flowers. There is much reason to suspect that the two belong to one species. *V. Nuttallii* usually has a shorter but distinct stipe to the pod; but in one of the original specimens the stipe is fully as long as in *V. gracilis*.

††† *Silicula manifeste stipitata, exacte globosa.*

‡ *Floribus saturate flavis.*

9. *V. GRACILIS* (*Hook. Bot. Mag.* t. 3533): glabrata, erectiuscula; foliis lanceolatis subintegerrimis; racemo laxifloro elongato; pedicellis elongatis patentibus; silicula glabra stipite duplo longiore stylo pl. m. breviorē. — The silicles of Berlandier's and Drummond's specimens are, as described and figured by Hooker, "not larger than hemp seed." In those of Lindheimer, where the whole plant is stronger, and in

distribution. Thickets, New Braunfels, &c. February. *D. Roemeriana*, *Scheele in Linnæa*, 21, p. 583, would seem to be

cultivated specimens, the silicles are considerably larger. The stipe is sometimes almost as long as the pod; sometimes scarcely half that length.

10. *V. GORDONI* (*sp. nov.*): tomentuloso-canescens; caulibus diffusis; foliis subintegerrimis, infimis subspathulatis, superioribus lanceolatis vel linearibus; racemo fructifero laxo; pedicellis brevibus patentibus; silicula glabra breviter stipitata stylo subduplo longiore. — On the Canadian, in the Raton Mountains, *Mr. Gordon*, (communicated by *Dr. Engelmann*.) April; in flower and fruit. — This is, perhaps, a perennial species, but the root appears more like that of a biennial. The plant is silvery-hoary, with a stellate pubescence; except the pods, which are very smooth, and two lines in diameter. Flowers not larger than those of *V. gracilis*, more crowded. The unripe seeds are not at all margined.

‡ ‡ *Floribus albidis; siliculis nutantibus.*

11. *V. PALLIDA* (*Torr. & Gr. Fl. l. p. 668, Suppl.*): pube minuta lepidoto-stellata subcinerea; caulibus adscendentibus ramosis; foliis oblongis plerisque laciniato-dentatis basi attenuatis, radicalibus sublyratis; racemo laxifloro; pedicellis fructiferis recurvis; silicula globosa glabra leviter stipitata stylo tertia parte longiore. — *V. grandiflora* β . *pallida*, *Torr. & Gr. l. c. p. 101*. — The corolla is said, by *Dr. Leavenworth* (who alone has met with this plant) to be "white."

§ 2. *Perennes (Argenteæ seu incanæ.)*

* *Seminibus levissime marginatis; silicula substipitata stylo brevior.*

— 12. *V. ENGELMANNII*, *Gr. Gen. Ill. t. 70*. Vide supra, No. 325.

** *Seminibus immarginatis; silicula stipitata stylo duplo longiore.*

13. *V. LINDHEIMERI*, *sp. nov.* Vide supra, No. 327.

*** *Seminibus immarginatis; silicula non aut vix stipitata.*

† *Stylo silicula æquilongo v. longiore.*

‡ *Caulibus elongatis decumbentibus; foliis spathulatis; silicula glabra.*

14. *V. ARGYRÆA*, *sp. nov.* Vide supra, No. 329.

‡ ‡ *Caulibus abbreviatis suffruticosis; foliis angustis; silicula glabra.*

15. *V. FENDLERI*, *Gray, Pl. Fendl. p. 9*.

16. *V. STENOPHYLLA* (*sp. nov.*): humilis, cano-argentea, multiceps; foliis anguste linearibus gracilibus confertis; racemo multifloro denso; silicula membranacea glaberrima stylum æquante. — On the Rio Grande, Texas, *Mr. Charles Wright*. Monterey and Aguaneuva, Northern Mexico, *Dr. Gregg*, *Dr. Edwards*. — The specimen of *Mr. Wright* is the most characteristic one. From a thick, ligneous caudex it bears several, more or less woody branches, a span high, densely leafy, and terminated by a very compact raceme of golden yellow flowers, nearly as large as these of *V. grandiflora*. The plants of *Gregg* and *Edwards* are less condensed, and with smaller flowers. The leaves are an inch or more, the lower over two inches in length, entire, or the lower sparingly toothed; and the pods, also, are twice the size of those of *V. Fendleri*. Specimens intermediate between the two may perhaps occur.

‡ ‡ ‡ *Caulibus herbaceis erectis vel adscendentibus; silicula globoso-obovata incana.*

17. *V. LUDOVICIANA*, *DC. Syst. 2, p. 297; Hook. Fl. Bor.-Am. 1, p. 48*. *V. globosa*, *Desv. Jour. Bot. 3, p. 171 & 184, ex char.*

† ‡ *Stylo silicula globosa glabra vel stellato-puberula, 2-3-plo longiore.*

18. *V. ARCTICA*, *Richards. Appx. Frankl. Journ.; Hook. l. c.*

a form of the same species, or perhaps of *D. cuneifolia*. To the latter, as a slender form, or to *D. micrantha*, would seem to belong *D. filicaulis*, *Scheele, l. c.*

CAPPARIDACEÆ.

332. *POLANISIA TRACHYSERMA*, Torr. & Gr. *Fl.* 1. p. 669; *Gr. Gen. Ill.* 1. t. 79, & *Pl. Fendl.* p. 10. Sandy soil, on the Colorado and Pierdenales. July, October. This differs from *P. uniglandulosa*, as I have formerly remarked, principally in the smaller size of the flowers. It is likely to prove only a northern form of that species.

POLYGALACEÆ.

333. *POLYGALA LINDHEIMERI* (*sp. nov.*): pubescens; caulibus e radice incrassata lignea plurimis foliosis; foliis alternis subsessilibus coriaceis utrinque reticulatis nitidis cuspidato-mucronatis, imis obovatis, superioribus gradatim ovatis oblongis et lanceolatis; racemis terminalibus demumque lateralibus laxifloris; rachi geniculato-flexuosa bracteis parvis ad nodos 3 persistentibus squamosa; pedicellis brevissimis; sepalo superiore bracteiformi a flore subdistante alis spathulatis vix dimidio brevioribus; carina imberbi crista calcariformi aucta; capsula immatura pilosula. — Rocky declivities of the upper Guadeloupe and Pierdenales. June, August. Also met with by Mr. Wright, from the Colorado to the Rio Grande. — Root not unlike that of *Krameria lanceolata*, long, covered with a thick reddish bark. Stems a little woody at the base,

Sect. II. *ALYSSOIDES*, DC. Silicula ovata, valvis convexis rigidiusculis.

19. *V. ALPINA*, Nutt. in Torr. & Gr. *Fl.* 1. p. 102; *Gr. Pl. Fendl.* p. 9.

V. lasiocarpa, Hook. *ined.* (Vide *Bot. Mag.* sub t. 3464) is unknown to me. I have seen no Texan species with other than glabrous fruit.

V. argentea, Schauer in *Linnaea*, 20, p. 720, when the mature fruit is known, may prove to be a species of *Synthlipsis*.

V. didymocarpa, Hook., and *V. Geyeri*, Hook. constitute the genus *Physaria*.

The *Iberis*, *n. sp.?* Torr. in *Ann. Lyc. New York*, 2, p. 166, from Dr. James's Collection, is *Dithyræa Wislizeni*, Engelm. in *Wis. Rep.* p. 96, which has recently been met with, in flower only, on the Upper Canadian, by Mr. Gordon.

branching, a span to a foot high, clothed with a soft spreading pubescence. Leaves from 5 to 10 lines long, coriaceous, minutely pubescent but shining, with a prominent midrib, the veinlets conspicuously reticulated on both surfaces. Racemes gradually prolonged so as to bear from 10 to 20 flowers in the course of the season; the joints of the remarkably zig-zag rachis from one to three lines long. Pedicels shorter than the calyx, 3-bracteate. Upper sepal a little remote from the flower, like a bractlet, ovate-oblong, concave, with the rudiment of a gland in its axil. Stamens 8, subdiadelphous. The galea of the carina is beardless, and bears a conspicuous, straight spur on the back in place of a crest. The ripe fruit is unknown. The large upper sepal is persistent at the base of the half-grown fruit, after the others have fallen. All the sepals are deciduous in what I take to be *P. ovalifolia*, *DC.*, which was gathered on the Leona and Rio Grande by Mr. Wright, as well as by Dr. Edwards and Major Eaton at Monterey, &c.

KRAMERIACEÆ.

(13.) *KRAMERIA LANCEOLATA*, *Torr. in Ann. Lyc. New York*, 2. p. 168; *Gr. Gen. Ill.* 2, t. 185, 186. New Braunfels, among rocks. April, June. "Roots often more than three feet long."

VIOLACEÆ.

(578.) *IONIDIUM LINEARE*, *Torr. in Ann. Lyc. New York*, 2, p. 168; *Torr. & Gr. Fl.* 1. p. 145; *Gr. Gen. Ill.* 1, t. 82. *I. stipulaceum*, *Nutt. in Torr. & Gr. l. c.* Stems much branched from a ligneous perennial root, diffuse, or the branches often erect. Leaves opposite or occasionally alternate, entire or remotely serrulate; the lower varying from lanceolate to oblong or obovate; the upper linear, obtuse, usually three or four times the length of the stipules. Seeds turning black. — I possess no perfectly authenticated specimens of *I. stipulaceum*, *Nutt.*; but I have good reason to

think that it is not specifically different from the plant which was earlier indicated (from a branch, bearing narrowly linear leaves alone) by Dr. Torrey, under the name of *I. lineare*; which name I have therefore adopted. The stipules should not have been termed "minute" in *I. lineare*, since they are further said to be "one-third the length of the leaves." The upper ones are seldom so long as this, while the lower are frequently "half as long as the leaves," as they are said to be in *I. stipulaceum*. It is manifest that all our specimens belong to one and the same species.

334 344. *I. LINEARE*, Torr., ramis floriferis erectis strictioribus. *I. stipulaceum*, Nutt. l. c. Damp Muskit flats, San Antonio. April.

CARYOPHYLLACEÆ.

335. *PARONYCHIA LINDHEIMERI* (Engelm. ined.): annua, glabra, erecta; caule ramosissimo diffuso in cymas apertas multoties dichotomas diviso; foliis setaceis, superioribus bracteisque consimilibus mucronatis internodio brevioribus; calyce basi breviter pubescentibus, laciniis in aristulam iisdem duplo brevioribus productis. — Naked, rocky places in high prairies. September. (Also gathered in Western Texas, by Mr. Wright. — Nearly allied to *P. setacea*, and very similar in aspect, foliage, flowers, &c., but the cymes are more open; the calyx minutely pubescent, instead of strigose-hirsute, at the base; and the awns much shorter than its segments, instead of being nearly of their length. The plant is smoother, often six inches high, and very much branched.

(222.) *P. DICHOTOMA*, Nutt. Gen. 1. p. 159; Torr. & Gr. Fl. 1. p. 171. High, rocky places, north of New Braunfels. August, October.

336. *STELLARIA PROSTRATA*, Baldw. in Ell. Sk. 1. p. 518. Rocky and shaded margins of rivulets, about the Comale Springs, and at New Braunfels; flowering from March to October. (Also Trinity Bay, Mr. Wright.)

PORTULACACEÆ (by Dr. Engelmann).

(579.) *TALINUM AURANTIACUM* (*n. sp.*): radice tuberosa; caule adscendente herbaceo ramoso patulo ~~piloso~~ *folioso*; foliis lanceolatis s. lineari-lanceolatis subsessilibus carnosiss; floribus axillaribus singulis; pedunculis supra basin articulatis bibracteolatis, fructiferis reflexis; sepalis ovatis acuminatis tricarinatis, fructiferis subpersistentibus; petalis ovatis mucronatis; staminibus sub-25; seminibus lineis gyratis carinatis et striis tenuissimis transversis eleganter notatis. — On the Sabinas, and more abundantly on the Liano, rare about New Braunfels, on rocky soil or almost naked rocks; in flower principally in July and August, but also at other seasons, always after heavy rains. — Root white, fleshy, tuberous, often bifurcated. Stems 8-16 inches long, ascending, much branched. Leaves $1\frac{1}{2}$ –2 or even 3 inches long, 2–4 lines wide. Peduncle 4–5 lines long. Sepals of the same length; petals 5 lines long and 3 wide, orange to red; filaments red; style and stigma orange. Seeds elegantly marked, black, larger than in any other North American species. — Distinct from all other species described by De Candolle, by the single flowers.

(580.) *TALINUM SARMENTOSUM* (*n. sp.*): radice crassa; caule prostrato; ramis debilibus sarmentosis ascendentibus foliosis; foliis carnosiss late ovatis cuspidatis basi attenuatis subsessilibus; cymis axillaribus bracteatis subtrifloris (rarius compositis) versus apicem laxè paniculatis; floribus longe pedicellatis; sepalis ovatis cuspidatis membranaceis deciduis; staminibus sub-15; seminibus nigris nitentibus sub lente tenuiter tuberculatis. — New Braunfels, among shrubs on the banks of the Guadalupe. July, September. — Stems prostrate; branches weak, ascending, supported by the shrubs under “which the plant grows, often 6–10 feet long;” — the specimens before me are 2–4 feet long. Lower leaves $2\frac{1}{2}$ – $3\frac{1}{2}$ inches long, $1-1\frac{3}{4}$ wide. Pedicels 6–12 and more lines long, thickened at the apex. Sepals about one line long; flowers apparently

4–5 lines in diameter, purple. Capsule about one line long, almost globose. Seeds smoother than in any other of our species.¹

¹ “Besides these two species, we have in the flora of the United States, three others very different from these, but nearly related to one another; namely, the well-known *T. teretifolium*, Pursh, *T. calycinum*, Engelm. in Wislitz. Rep.; and *T. parviflorum*, Nutt.; all three now in cultivation with me, and well distinguished from one another. *T. calycinum* is very ornamental; the large flowers have sometimes six to ten petals.

“Mr. Lindheimer has discovered two undescribed species of *Portulaca* in Western Texas. As these plants are so difficult to preserve and so unsightly when dried, he did not collect specimens for distribution; but from his seeds both were raised by me last season and prove very remarkable plants, one from its near alliance with *Portulaca oleracea*, the other from its great difference from that species. I arrange the species of our flora (all of them annuals) in the following manner.

PORTULACA.

* *Spathulata*: glaberrimæ; caule tereti; foliis spathulatis obovatis; sepalis alato-carinatis cum operculo capsulæ maturæ deciduis; petalis flavis emarginatis s. bilobis; capsulæ annulo circulari tumido.

1. *P. OLERACEA*, L.: foliis obovatis spathulatis apice rotundatis; alabastro compresso ovato acuto; sepalis carinatis; staminibus 7–9; stigmatibus 5 stylum brevem superantibus; seminibus minoribus minute sub lente verruculosi nigris. — St. Louis, very common; flowers open in direct sunshine between 9 and 10 o'clock, A. M. August.

2. *P. RETUSA* (n. sp.): foliis cuneatis retusis, seu emarginatis; alabastro compresso orbiculato obtuso; sepalis late carinato-alatis; staminibus sub-15 (17–19, Lindh., in plantis parvulis 7–10); stigmatibus 3–4 stylum æquantibus vel eo brevioribus; seminibus majoribus sub lente echinato-tuberculatis nigricantibus. — Granite region of the Llano in Western Texas. Flowers open in direct sunshine between 8½ and 9½ A. M. (in St. Louis, in August), always before the common species. — Distinguished from the nearly allied *P. oleracea* by the broader retuse leaves, and broader calyx; by the larger, more distinctly tuberculated, somewhat paler seeds, much larger style, and shorter and fewer stigmata. Number of stamina variable. In large specimens (bushes several feet in diameter, stems at base 6–7 lines thick, prostrate or ascending); the number counted was 15. Stigmata almost invariably 4, rarely 3.

** *Lanceolata*: glaberrimæ; caule angulato; foliis superioribus lanceolatis; sepalis vix carinatis post anthesin deciduis; petalis plerumque versicoloribus acutiusculis; capsulæ ala circulari lata ex calycis basi aucta.

3. *P. LANCEOLATA* (n. sp.): sub-erecta; foliis inferioribus spathulatis obtusis, superioribus lanceolatis acutis; petalis obovatis s. oblanceolatis acutiusculis s. cuspidatis; staminibus 7–27; stigmatibus 3–6; capsula turbinata versus apicem ala circulari lata cincta; seminibus majoribus echinato-tuberculatis cinereis.

α. *VERSICOLOR*; petalis majoribus obovatis rubris basi flavis; staminibus 12–24; stigmatibus 5–6 linearibus; capsulæ ala orbiculari plana.

β. *MINOR*; petalis minoribus oblanceolatis sæpe totis flavidis rarius apice rubellis; staminibus 7–12; stigmatibus 3–4 ovato-oblongis; capsulæ ala subpentagona undulata.

Granite region of the Llano, in Western Texas. — Stems in smaller plants a few inches high, erect, with erect branches; in larger specimens a foot or more high, as-

LINACEÆ.

† LINUM BOOTHII, *Planchon in Lond. Jour. Bot.* 7, p. 475. Upper Pierdenales, sparsely in sandy prairies.—The specimen is entirely in fruit, and has lost nearly all its leaves. Some remarks on this species will be found under No. 581.

337. L. BOOTHII, γ. RUPESTRE; caulibus gracilentis; foliis lineari-subulatis; sepalis paulo latioribus; capsulis minoribus. — L. rupestre, *Lindheimer in sched.* New Braunfels, with *Cereus cæspitosus*, growing sparsely on rocky soil or in crevices of naked rocks. May. — Stems several, from a firm, probably not really perennial root, very strict and slender, a foot or more high. Petals three or four times the length of the lanceolate-ovate, cuspidate, and glandular-ciliate sepals.

338. L. MULTICAULE, *Hook. in Torr. & Gr. Fl.* 1. p. 678; *Planchon in Lond. Jour. Bot.* 7, p. 185. Upper Pierdenales; socially in naked, clayey places in open oak woods. October; mostly in fruit. Flowers small, yellow. Styles united almost to the summit. Branches clothed with the minute lanceolate-subulate leaves quite up to the flower; the

ascending, very much branched. Leaves $\frac{1}{2}$ –1 inch long, 1–3 lines wide. Flowers 4–6 lines in diameter, very pretty in the larger forms, open from 8–9 o'clock, A. M. (St. Louis, August); earlier than any other species. Capsule with the wing, which is formed by the enlarged base of the deciduous calyx, 2–2½ lines in diameter. — The seeds of both forms are absolutely identical, so that the difference in the number of stamina and stigmata, and in the size and color of the flower, cannot constitute them distinct species, as Mr. Lindheimer suggests. He adds that the leaves of α have an acidulous, and those of β an insipid, mucilaginous taste.

*** *Teretifoliae*: ad axillæ pilosæ; caule tereti; foliis plus minus teretibus, basi paulo productis; sepalis membranaceis ecarinatis cum operculo capsulæ maturæ deciduis; petalis violaceis; capsulæ margine circulari tumido.

4. P. PILOSA, L.: sepalis lineari-oblongis, petalis ovato-oblongis obtusis retusis s. emarginatis duplo brevioribus; staminibus 15–25 stigmatibus 5–6 subæquantibus; seminibus minutis nigris opacis minute tuberculatis. Texas, New Mexico, Mexico, etc. — Flowers open from 9–11 or 12 o'clock in bright sunshine, 4–5 lines in diameter: stigmata glandular, hairy on the margins only, purple.

5. P. GILLIESII, *Hook.*: sepalis orbiculato-ovatis petalis orbiculato-obcordatis ter quaterve brevioribus; staminibus numerosissimis (60) stigmatibus sub-5 exsertis longe brevioribus; seminibus paulo majoribus tuberculatis cinereis nitentibus. — Common in cultivation, and here and there almost naturalized; originally from Chili. Flowers 20–24 lines in diameter, open from 8 or 9 to 2 or 3 P. M. in sunshine. Stigmata glandular, hairy on the margins and upper surface, yellowish or greenish.

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margins of the latter aculeolate-ciliate, or in Lindheimer's specimens nearly smooth and naked. It is probably only an annual, as likewise the next. Mixed with this, in the distribution, and probably forming the whole in many sets, are fruiting specimens with the upper leaves sparser and the tips of the branches naked, like a short peduncle. These belong to the following species, if indeed it be different, and to the New Braunfels locality there cited.

339. *L. HUDSONIOIDES*, *Planchon l. c.* p. 186. New Braunfels, growing in dense patches, on dry soil, with a rocky substratum, in naked places in the prairies; May; in fruit; (distributed under No. 338). In clayey soil, Agua Dulce on the Matagorda Bay; February, in flower. — The leaves are less approximated and less squamous than in the preceding; the uppermost sparse on the branches, so that the flower, and especially the fruit, is raised on a manifest peduncle, sometimes of more than half an inch in length. The capsules and the flowers are larger; the yellow petals nearly five lines in length. But it too closely resembles *L. multicaule*, of which it is perhaps only a variety.

(581.) *LINUM BERLANDIERI* (sphalm. *Berendieri*), *Hook. Bot. Mag.* t. 3480; *Engelm. & Gr. Pl. Lindh.* p. 5; *Gr. Pl. Fendl.* p. 25, No. 84 (non. 85); *Planchon in Lond. Jour. Bot.* 7, p. 473; *Scheele in Linnæa*, 21, p. 596. *L. rigidum*, β . *Berendieri*, *Torr. & Gr. Fl.* 1. p. 204. Stony, dry prairies, near New Braunfels. May. — Except in the larger size of the flowers, and the laxer leaves, this species is hard to distinguish from *L. rigidum*. Both, I believe, are *annuals*; but, as they flower through a great part of the year, the root hardens, and the base often shows the vestiges of earlier stems, which have perished; thus giving it somewhat the appearance of a perennial. The styles are united either for two-thirds of their length, or almost to the apex. One of Lindheimer's specimens in my set (gathered in 1846) not indistinctly shows small stipular glands; while that of the Coll. 1847–8 does not. These glands are equally visible in some of the

specimens of No. 85, *Pl. Fendl.*, which I should now refer to *L. rigidum*, *Pursh.* I believe that I have also noticed them in *L. Virginianum*; but they do not appear in any of the specimens preserved in my herbarium. The localities from the eastern parts of the United States, cited from *Torr. & Gr. Fl. N. Amer.* by Planchon under *L. Berlandieri*, belong to his *L. Boottii*, as I suppose does also the whole of what is called *L. rigidum* in New England, &c. At least this is the case with the plant gathered at New Haven by Oakes, and at Providence by Mr. Olney. The latter is exactly *L. Boottii a. Planchon, l. c.* As to his *L. Boottii β.* from Texas, by Lindheimer, I fortunately possess a corresponding specimen, supplied by Engelmann subsequently to the distribution of Lindheimer's former collections, and named "*L. rigidum*" on a ticket bearing the printed number 118, which number has been erased with the pen. This explains its occurrence in the same way in *herb. Hooker.* The root is annual. If it be a distinct species, as is most likely, still it appears, from what has already been stated, the stipular glands cannot be entirely relied upon for a character. Planchon has omitted to notice the more or less glanduliferous-ciliate margins of the sepals, which are conspicuous in most cases, and caused the plant to be referred in the Flora of North America, &c. to *L. rigidum*, to which it is very nearly related.

GERANIACEÆ.

340. *ERODIUM TEXANUM* (*Gr. Gen. Ill.* 2, p. 130, t. 150):
 bienne v. annuum; caulibus diffusis cinereo-puberulis; foliis
 glabriusculis cordatis crenatis plerumque 3-lobatis, superiorum
 lobis lateralibus bifidis, terminali 3-5-fido; pedunculis 3-flo-
 ris; floribus vernalibus petalis purpureis sepala scarioso-mar-
 ginata subulato-mucronata duplo superantibus, serotinis ape-
 talis; pedicellis calycibusque pube appressa canescentibus
 eglandulosis; carpellis hirsutis lineari-clavatis basi pungenti-
 bus.— Small thickets in prairies above Victoria; and in
 patches in rocky soil at New Braunfels; March, April. Also

the apetalous state (340, in Coll. 1847–8); the particular locality not given. Mr. Wright also gathered it in Texas, where it appears to abound.—From the Californium *E. macrophyllum*, *Hook. & Am.* (the leaves of which are often less than an inch in diameter,) which it most resembles, this species is distinguished by its smaller flowers, more deeply lobed leaves, more slender carpels, and the close cinereous pubescence of the pedicels and calyx, which are destitute of glandular hairs.

OXALIDACEÆ.

341. *OXALIS VESPERTILIONIS*, *Torr. & Gr. Fl.* 1. p. 679. Prairies, Upper Pierdenales. October. Also gathered in Western Texas by Mr. Wright.

ZYGOPHYLLACEÆ.

342. *KALLSTRØEMIA MAXIMA*, *Torr. & Gr. Fl.* 1. p. 213; *Gr. Gen. Ill.* 2, t. 146. Prostrate in clayey soil, near San Antonio. September.

(582.) *GUAIACUM ANGUSTIFOLIUM*, *Engelm. in Wislitz. Memoir, Appx.* p. 113; *Gr. Gen. Ill.* 2, p. 123 (subgen.? *GUAIACIDIUM*), t. 149. Western Texas, in fruit; the station not given.

RUTACEÆ.

343. *RUTOSMA TEXANA*, *Gr. Gen. Ill.* 2, p. 143, t. 155. Stony prairies, with Cactaceæ, Upper Guadaloupe. March. Also detected by Mr. Wright in Texas, and by Dr. Gregg at Monterey.—Remarkable as the sole representative of the proper Rutaceæ in America.

ANACARDIACEÆ.

344. *RHUS COPALLINA*, *Linn.* var. *LEUCANTHA*, *DC.*: caule 10-pedali; foliis lanceolatis; floribus albis. *R. leucantha*, *Jacq.* Rocky precipices, New Braunfels. July.

345. *R. COPALLINA*, *Linn.* var. *LANCEOLATA*: foliis lanceolatis subfalcatis sæpe elongatis integerrimis vel subserratis;

floribus flavis (pl. submasc. subsœm. fruct.) Rocky soil and high prairies, New Braunfels. July. Plant from two to five feet high.

346. *R. TOXICODENDRON*, *Linn.*; *Torr. & Gr. Fl.* 1. p. 218. Thickets and stony prairies, New Braunfels. May, in flower; September, in fruit. "Erect, not climbing." — This is the *Rhus verrucosa*, *Scheele in Linnæa* 21, p. 592, which is compared only with *R. aromatica*! The "Verrucæ magnæ subrotundæ atropurpureæ lucidæ," of the lower surface of the leaves, which suggested the name, are merely exudations of resinous juice caused by the puncture of insects on some leaves only, as Dr. Engelmann has pointed out.

† *R. TOXICODENDRON*, *Linn.* var. *foliis ramulisque molliter pubentibus*. Thickets, New Braunfels.

347. *R. (LOBADIUM) TRILOBATA*, *Nutt. in Torr. & Gray, Fl.* 1, p. 219. Rocky soil, margin of high prairies, New Braunfels; March (in flower); June (in fruit). A slender, much branched shrub, two to five feet high.

348. *R. VIRENS* (*Lindheimer, Mss.*): glabella; foliis semipervirentibus 3–4-jugis cum impari, rachide nuda; foliolis ovatis oblongisve obtusis v. obtusiuscule acuminatis margine subrevolutis integerrimis coriaceis supra nitidis subtus pallidis sub lente minutim tomentulosis; floribus albidis thyrsideo-paniculatis; paniculis axillaribus folio brevioribus; drupa rubra hirsuta, putamine lenticulari lævi. — Rocky soil, in open places, in Cedar woods, New Braunfels, &c. March; in fruit, August. Mr. Wright sends the same species from Western Texas; and Dr. Coulter collected it at Zimapan, Mexico. A well marked species, of the section Sumac. Leaflets an inch or rather more in length, smooth, except under a lens, soft to the touch, shining above, thick and rigidly coriaceous.

MALVACEÆ.

† *CALLIRRHÖE INVOLUCRATA*, *Gray, Pl. Fendl.* p. 14, & *Gen. Ill.* 2, p. 53, t. 117. *Malva involucrata*, *Torr. & Gray, Fl.* 1, p. 226. Oak openings, on the Pierdenales. June.

(584.) *C. DIGITATA*, *Nutt. in Jour. Acad. Philad.* 2, p. 181; *Gray, Pl. Fendl. l. c., & Gen. Ill.* 21, p. 53. *Nuttallia digitata*, *Bart. Fl. N. Amer.* 2, t. 63, *Hook. Exot. Fl.* 3, t. 171. *Nuttallia cordata*, *Lindl. Bot. Reg.* t. 1938. Prairies on the Pieddenales, at the margin of woods. May, June. Also gathered by Mr. Wright. "Root edible, more pleasant than that of *Psoralea esculenta*," *Lindh.* — One of the most showy species of this handsome genus; the petals, over an inch in length, are beautifully fringed at the summit. The radical leaves are very various.

349. *C. PEDATA*, *Gray, Pl. Fendl.* p. 17, (excl. syn. *Nuttallia digitata*, *Bart.*) & *Gen. Ill.* 2, p. 53, t. 118. *Nuttallia pedata*, *Nutt. in Hook. Exot. Fl.* 3, t. 172. Dry prairies and margin of thickets, near Victoria, New Braunfels, and on the Cibolo, &c. Also abundantly gathered by Mr. Wright. February, April. — In cultivation, this handsome species produces its deep cherry-red blossoms through the whole season, and when supported attains the height of five or six feet. Although it has been confused with the preceding, it is totally distinct from it. It has much smaller flowers, leafy stems, more incised foliage, and a slender, annual or biennial root.

350. *M. WRIGHTII*, *Gray, Pl. Fendl.* p. 21, & *Gen. Ill.* 2, p. 60, t. 122. *Malva aurantiaca*, *Scheele, in Linnæa*, 21, p. 469. Muskit flats, in black and heavy prairie soil. New Braunfels. July. — The stems are rigid, from a more or less ligneous base; the rather large, golden yellow flowers open in the afternoon. The fructiferous calyx is somewhat enlarged, and expanded, and tinged with brownish-red; the carpels in the living plant (raised in the Cambridge Botanic Garden,) are more deeply tinged of the same color. — The characters of a new species, allied to *M. coccineum*, are subjoined.¹

¹ *MALVASTRUM PEDATIFIDUM* (sp. nov.): caulibus e radice perenni diffusis gracilibus ramosis; foliis tripartitis profunde trifidisve pilis stellatis parce hirsutis, segmentis lateralibus bifidis, terminali subtrilobo, omnibus subpinnatifido-incisis, lobulis dentibusve patentibus; stipulis subulatis; floribus sparsis axillaribus et secus ramulos laxo racemosis; bracteolis 3 setaceis calyce subduplo brevioribus; carpellis muticis, rostro

351. *MALVASTRUM CARPINIFOLIUM*, Gray, *Pl. Fendl.* p. 22. In sterile soil, New Braunfels, &c. August. — To the synonyms cited in the work above-cited, I have to add that of *Malva Lindheimeriana*, *Scheele in Linnæa*, 21, (1848,) p. 470. The flowers open merely during a few hours of the brightest sunshine.

352. *PAVONIA WRIGHTII*, Gray, *Gen. Ill.* 2, p. 76, t. 130. *P. lasiopetala*, *Scheele in Linnæa*, 21, p. 470. Rocky soil in Cedar woods, New Braunfels. Also gathered in Western Texas, by Mr. Wright, and near Monterey, in Northern Mexico, by Dr. Edwards and Major Eaton. — A low, shrubby species, with handsome, rose-colored flowers, which are larger in the wild than in our cultivated plant, from which the figure in the *Genera Illustrata* was made. The seeds are glabrous, except a little pubescence at the chalaza; and in some other respects, also, the species is not very well characterized by Scheele. His name, from its priority in publication, should probably be adopted, although so badly chosen; for the petals, at most sparingly stellate-pubescent externally, are often nearly or quite glabrous.

353. *A. TEXENSE* (*Torr. & Gray, Fl.* 1, p. 231): *tomento minuto molli undique velutino-canescens; caule (2-4-pedali) paniculato; foliis cordatis acutis vel subacuminatis serratis supra viridulis, ramealibus gradatim minoribus; pedunculis inferioribus petiolum subæquantibus, summis folio longioribus; corolla lutea; capsula ovoidea obtusa cinerea 8-loculari apice breviter 8-loba calyce 5-fido demum reflexo multum longiore; carpellis erectis obtusiusculis muticis 3-spermis.* — Prairies, &c. in hard and dry soil, New Braunfels. August, September. Apparently common throughout Texas, and to Monterey, in Northern Mexico, where it was gathered by Dr.

brevi complanato membranaceo inflexis. — On the Rio Grande, Texas, in dry soil. Cultivated in the Cambridge Botanic Garden, it flowers through the summer. Stems a foot or less in height, much more slender than in *M. coccineum*; the flowers smaller and paler (between a buff and a brick-color.) The leaves are not canescent, but green and sparsely stellate-hirsute, and their segments incised or almost pinnatifid; the lobes are tipped with a deciduous mucro or short seta.

Gregg. The expanded corolla is two thirds of an inch in diameter. The larger cauline leaves are from three to four inches long, on petioles of half that length. They are described in the *Flora of North America*, from the branches only. I do not know the *A. Nuttallii*.¹

354. *ABUTILON HOLOSERICEUM*, Scheele in *Linnæa*, 21, p. 471. *A. velutinum*, Gray, *Gen. Ill.* 2, p. 67, t. 125. Rocky soil, along the margin of thickets, New Braunfels, &c. August, September. Also gathered by Mr. Wright in Western and Southern Texas. — Stem three to six feet high; the larger leaves nearly a foot in diameter, on petioles six to eight inches long, very seldom at all lobed. The deep orange-yellow corolla is over an inch in breadth. The details of the fruit, &c. are well delineated in the plate cited above. The anthers are reniform, in the ordinary manner, not three-lobed, as described by Scheele. The young leaves are quite white; the older and larger ones greener. The root is said to be “ligneous and perennial?” in the wild plant. In cultivation it is an annual.

† *SPHÆRALCEA LINDHEIMERI* (sp. nov.): lanoso-tomentosa; caulibus decumbentibus basi ut videtur suffruticosis; ramis floridis assurgentibus; foliis cordatis sæpius rotundatis grosse crenatis indivisis; pedunculis petiolo longioribus; bracteolis involucelli 3 setaceis calycis lobis ovato-lanceolatis acuminatis dimidio brevioribus; corolla rosea. — Victoria, on the lower Guadalupe; margin of thickets on the prairie.

¹ Near the southwestern borders of Texas, Mr. Wright obtained specimens of the subjoined species, namely: —

ABUTILON WRIGHTII (sp. nov.): caulibus decumbentibus ramosis viscoso-pubescentibus et pilis gracillimis patentibus villosis; foliis ovato-cordatis obtusiusculis argute dentatis supra viridulis scabrido-velutinis subtus mollissime niveo-tomentosis; stipulis subulatis caducis; pedunculis unifloris petiolum æquantibus vel superioribus folium superantibus; calyce tomentoso 5-partito, laciniis sensim acuminatissimis corollam auream subæquantibus; capsula tomentulosa calyci æquilonga, e carpellis 7 apice subulato-rostratis 3-spermis. — On the Rio Grande and the Seco, *Mr. Charles Wright*. — Stems one or two feet in length; the leaves from one third to an inch and a half long. Calyx nearly as long as the peduncle. The golden-yellow corolla is over an inch in diameter when fully expanded. Capsule half an inch long, not inflated, the subulate beaks little diverging.

February; just beginning to blossom. Stems a foot long. Leaves one or two inches broad; the soft pubescence appearing as if deciduous with age. Calyx deeply 5-cleft; the lobes half an inch long. The expanded corolla about two inches in diameter. Staminal column stellate-hairy. Styles 17–18, clavate at the tip; the stigmas truncate rather than capitate. Ovules two or three in each cell. Fruit not seen.

355. *SIDA FILICAULIS*, Torr. & Gray, *Fl.* 1, p. 232. *S. filiformis*, Moricand, *Pl. Nouv. Amer.* p. 38, t. 25. High and dry prairies and sunny declivities, New Braunsfels, &c. June, August.—Prostrate, in patches, producing very numerous slender and branching stems from a perennial and somewhat ligneous root. These, when young, are beset with long, spreading hairs, which are so slender that they often escape notice, and are also deciduous from the older stems. Hence our Texan plant is doubtless the *S. filiformis* of Moricand, gathered at Tampico by Berlandier. Moricand's name is a little the earlier published; but it appears from Steudel that there is a prior *S. filiformis* of Jacquin, which has been overlooked.¹

(583.) *S. PHYSOCALYX* (sp. nov.): caulibus e radice carnosa crassa plurimis decumbentibus ramosis strigosis; foliis carnosulis ovato-oblongis crenato-dentatis basi 5–7-nerviis

¹ *Sida anomala* β. Mexicana, Moricand, *l. c.* p. 36, t. 24, also from Tampico, is *S. fasciculata*, Torr. & Gray, *Fl.* 1, p. 231, which has recently been gathered in Western Texas, by Mr. Wright. The corolla, in dried specimens, is pink or rose-color, as is also said by Moricand, and the short, tufted stems spring from a stout perennial root. Another species, indicated by Dr. Engelmann, I know only from a fragment, namely:—

SIDA HETEROCARPA, Engelm. *Mss.*: “stellato-pubescent; caule erecto ramoso; foliis basi subcordatis obtusis crenato-dentalis, inferioribus lanceolatis, superioribus linearibus; tuberculo subbasi petioli subspinoso; petiolis brevibus stipulas setaceas et pedicellas solitarias s. fasciculatas superantibus; carpellis 5 nigris divaricato-birostratis apice pubescentibus latere tenuiter rugulosis, dorso membrana tenui evanescente clausis.—Road-sides, waste places, Houston, Texas, with *S. spinosa*. Annual? Flowers in August and September. Distinguished from *S. spinosa* by the narrower dentate-crenate (not serrate) leaves, and smaller black (not light brown) carpels, rugulose (not lacunose-reticulated) on the sides, with a prominent point on the back, broader, shorter, more divaricate, not erect beaks. The seed escapes through the back, not through the regular opening at the top.”

subcordatis petiolo subduplo longioribus supra pilis simplicibus subtus pilis 3-5-partitis appressis parce strigosis, infimis rotundatis, summis sublanceolatis acutis; stipulis subulatis; pedunculis axillaribus unifloris petiolo brevioribus fructiferis nutantibus; calyce 5-partito membranaceo inflato 5-alato clauso pedunculum adæquantibus, segmentis late ovatis quasi cordatis; corolla flavida vix exserta; ovario carnoso arcte depresso 10-lobo pruinoso demum in carpella 10 rotundata intus subrostrato-producta mutica semini conformia nitida minute reticulata calyce maximo vesicario inclusa secedentibus. — On the Liano. A well-marked species, apparently allied to *S. physalodes*, *Presl*; the calyx strikingly inflated, like a *Physalis*; the corolla inconspicuous and opening only for a short time in direct sunshine. It has been cultivated during the past summer in the Botanic Garden, and it forms a conical and fleshy perennial root. Specimens have been gathered by Mr. Wright, and others in Southern Texas, by Wislizenus, south of El Paso del Norte, and by Dr. Gregg in Northern Mexico.¹

¹ Three other undescribed Texan species have been detected by Mr. Wright namely: —

SIDA TRAGLEFOLIA (sp. nov.): humilis; caulibus (e radice perenni?) suberectis petiolisque pube stellata subglutinosa velutinis setisque patentibus gracillimis hispidis; foliis ovato-oblongis angulato-cordatis grosse dentatis penninerviis basi 5-7-nervatis supra parce subtus molliter pubescentibus petiolo gracili (pollicari) vix duplo longioribus, superioribus acutis; stipulis setaceis; pedunculis axillaribus unifloris petiolum subæquantibus; corolla supra calycem villosulum paulo excedente; carpellis 10 glabriusculis apice obtuso bipartibilibus summo dorso bicorniculatis. — Raised in the Botanic Garden, Cambridge, from seeds gathered in southern Texas by *Mr. Charles Wright*. The foliage is not unlike that of *Tragia urticæfolia*. Corolla fugacious, half an inch in diameter. Carpels short, beakless, bimucronate or bicorniculate on the back near the apex.

S. FILIPES (sp. nov.): furfuraceo-canescens; caule erecto paniculato gracili: foliis brevissime petiolatis lanceolatis basi cordatis dentato-serratis obtusiusculis supra velutino-pubescentibus subtus ramulisque cano-tomentosis nunc fulvis vel ferrugineis; stipulis setaceis petiolum excedentibus; pedunculis unifloris capillaribus (2-3-pollicaribus) foliis longioribus paulo sub flore pendulo articulatis; corolla (purpurea?) calycem subduplo superante; carpellis 7 reticulato-rugosis muticis superne pubescentibus dorso canaliculatis bivalvibus. — On hills above Austin, Texas, *Mr. Charles Wright*. Also near Monterey, Mexico, *Dr. Edwards* and *Major Eaton* (in *Herb. Torrey*). — Base of the slender stems wanting, but apparently it is entirely herbaceous, of two or three feet in height. The leaves are from one and an half to two

356. *MELOCHIA PYRAMIDATA*, *Linn.*; *Torr. & Gray, Fl.* 1. p. 683; *Gray, Gen. Ill.* 2. t. 134. Upper Guadalupe, on rocky soil. August.

357. *HERMANNIA TEXANA*, *Gray, Gen. Ill.* 2. p. 88. t. 135. Rocks, on the Upper Guadalupe; in flower; and in high rocky prairies on the Salado River; in fruit, October, (585.) — This interesting accession to our flora has also been found on the Rio Grande by Mr. Wright, and in Northern Mexico, by Dr. Gregg. Since the figure above cited was published, the plant has flowered in the Cambridge Botanic Garden. I must remark that the cinnabar-colored corolla is convolute and erect, not at all spreading at any period, as is represented in the figure, which was made from a dried specimen. The plant is suffruticose, with a thickened ligneous root.

VITACEÆ.

358. *V. RUPESTRIS*, *Scheele in Linnæa*, 21. p. 591. *V. populifolia*, *Lindh. ined.* Dry, rocky bed of the Cibolo, Upper Guadalupe, and other streams; also in rocky prairies on the Pierdenales; flowering in May; the fruit ripe in July, August, and September. — Like his other species, this is by

inches long, half an inch or less in width, and much like those of *Sphæralcea angustifolia*. The peduncles are remarkably long and slender, and curved towards the apex, near the articulation, so that the flower and fruit are pendulous. The calyx is 5-cleft to the middle; the lobes rather obtuse. The expanded corolla is only about four lines in diameter. It is said by Mr. Wright to be "blue;" in the dried specimens it is dark purple. — The species is probably allied to *S. venusta*, *Schlecht.*

S. CUNEIFOLIA (*sp. nov.*): cano-tomentosa, humilis; caulibus e basi fruticulosa assurgentibus ramosissimis; foliis parvulis rotundato-cuneiformibus flabellato 3-5-nerviis crenato-dentatis repandisve utrinque concoloribus; stipulis linearibus petiolum subæquantibus; floribus (flavis) brevissime pedunculatis folio brevioribus; carpellis 5 pubescentibus membranaceis turgidis apice inter rostra breviter mollia demum bivalvibus; semine globoso. — In subsaline soil, Texas, about thirty-five miles north-east of Eagle Pass, on the Rio Grande, September, *Mr. Charles Wright*. — A well-marked, low, procumbent species, in foliage and habit not unlike a *Hermannia*. The soft, downy leaves are only about half an inch in length and breadth, on petioles of three or four lines long; the flowers are solitary, or often clustered in the axils, and sometimes scarcely exceed the petioles. The yellow corolla is twice the length of the calyx, and is half an inch in diameter when expanded. The ovate carpels are membranaceous, slightly inflated; the seed is proportionally large and spherical, as in *Abutilon*, with the micropyle somewhat rostellate.

no means well characterized by Mr. Scheele. According to Lindheimer it is called *Mountain Grape*, and covers large tracts of rocky soil. It does not climb, but the stems are upright, and only two or three feet high. The branches are small, and the berries, of the size of peas only, are black, very sweet, and the most grateful as well as the earliest ripened grape of Texas. Dr. Engelmann informs me that he met with the same species in Western Arkansas, growing in similar situations. Also that a specimen exists in Michaux's Herbarium, on the same sheet with *V. riparia*. The leaves are somewhat glaucous, and in appearance between those of *V. riparia* and *V. vulpina*, but much smaller than in either.

359. *V. ÆSTIVALIS*, *Michx. Fl.* 2. p. 230: var. *tomento albo, nec fulvo*. Shady banks of streams, New Braunfels, &c.; flowering in May; the fruit ripe in August. "Climbing high trees. Berries of the size of peas, in large bunches, very black; the taste vinous and pleasant. Flowers very odorous." *Lindh.* — Under the name of "*V. candicans*, (*n. sp.*), *Engelm. ined.*, I have from Lindheimer, as also from Mr. Wright, Texan specimens of what appears to be a variety of *V. Californica*, *Benth.*, with the leaves somewhat less dentate and more densely tomentose underneath.

† *VITIS* (*CISSUS*) *INCISA*, *Nutt. in Torr. & Gray, Fl.* 1. p. 243. New Braunfels, climbing on Muskit trees. July–September. — Leaves thick and remarkably fleshy.

† *V. VULPINA*, *Linn.*; *Torr. & Gray, l. c.* *V. rotundifolia*, *Michx. Fl.* 2. p. 231. New Braunfels. April.

ACERACEÆ.

360. *NEGUNDO ACEROIDES*, *Mærch.*; *foliis adultis molliter pubescentibus*. New Braunfels; and banks of the Comale. March, in flower. August, in fruit.

MALPIGHIACEÆ.

361. *GALPHIMIA LINIFOLIA* (*Gray, Gen. Ill.* 2. p. 196. t. 173): *humilis*; *caulibus gracilibus e basi pubescente herba-*

ceis glabellis; foliis glabris glaucescentibus lanceolatis vel linearibus subsessilibus (infirmis sæpe oblongis vel ellipticis in petiolum angustatis) juxta basim utrinque uniglandulosis repando-subdenticulatis vel integerrimis; racemis laxis; pedicellis basi articulatis; petalis flavis cito rubris. — Rocky hills and prairies of the Upper Guadalupe. July — September. Also found by Mr. Wright; and in Northern Mexico by Dr. Edwards and Major Eaton. Stems from one to two feet in height.¹

SAPINDACEÆ.

362. *ÆSCULUS PAVIA*, β . DISCOLOR, *Torr. & Gr. Fl.* 1. p. 252. *Pavia discolor*, *Pursh.* Banks of the Comale Creek, March. "Shrub 6–10 feet high: flowers red or yellow."

363. *UNGNADIA SPECIOSA*, *Endl. Atakt. Bot.* t. 36, & *Nov. Stirp. Dec.* p. 86; *Torr. & Gray, Fl.* 1. p. 684; *Gray, Gen. Ill.* 2. p. 211, t. 178, 179. *U. heterophylla*, *Scheele in Linnæa*, 21. p. 589; *sphalm. pro U. heptaphylla*, *Scheele, l. c.* 22. p. 352. In bottom-woods, New Braunfels. March; sometimes flowering again in August. "Shrub 3 to 20 feet high, with many long stems, 1 to 3 inches thick, branching only at the top. Fruit sweet and pleasant, but emetic." *Lindh.* Its popular name is *Spanish Buckeye*. — "The fertile flowers and the fruit, although for several years known to us, have not until now been illustrated or described, except by Adolf Scheele, who has published a description, from *Lindheimer's* specimens, in the *Linnæa*, during the past year. The flowers

¹. On the southwestern border of Texas, Mr. Wright has detected a Malpighiaceous plant, which proves to be a third species of *Aspicarpa*, namely:—

ASPICARPA HYSSOPIFOLIA (*sp. nov.*): caulibus e radice lignescente plurimis erectis (6–12-pollic.); foliis lineari-lanceolatis basi rotundatis subcordatisve sessilibus; pedicellis axillaribus solitariis; petalis rotundatis eximie crispato-fimbriatis. — On the Rio Grande and Rio Seco, Texas, *Mr. Charles Wright*. — Leaves scarcely an inch long, one to two lines wide; the midrib and margins hispid-ciliate. Flowers about one third the size of those of *A. Hartwegiana*; the petaliferous ones scattered in the axils (not umbellate at the summit of the stem), and fructiferous, either two or three carpels ripening. These are much as in *A. Hartwegiana*, but smaller, more upright and acute, deeply umbilicate at the insertion. Fruit from the abnormal, apetalous flowers not seen.

which Endlicher happened to examine were pentapetalous, which is not the more usual case; and he erroneously states the plant to form a large tree, whereas it is commonly a slender shrub, of five or ten feet in height, or at most a small tree. Misled by these discrepancies, and by the differences of the two kinds of flowers, and, it would seem from his description, happening to possess *tetrasepalous* as well as tetrapetalous flowers (although there are five sepals in all my Lindheimerian and other specimens,) Mr. Scheele has wrongly introduced a second species, under the name of *U. heterophylla*. The leaflets vary from five, or even three, on the earlier leaves, to seven." *Gen. Ill. l. c.*—In seedling plants, raised in the Cambridge Botanic Garden, I have noticed a *lusus* of the earliest leaves, in which the leaflets are confluent.

(536.) *U. SPECIOSA*, *Endl.* Finer specimens of both sexes; from New Braunfels.

(537.) *SAPINDUS MARGINATUS*, *Willd.*; *Torr. & Gray, Fl. 1. p. 255*; *Gray, Gen. Ill. 2. t. 180.* New Braunfels. June, (in flower.)

RHAMNACEÆ.

364. *ZIZYPHUS OBTUSIFOLIA*, *Gray, Gen. Ill. 2. p. 170. t. 163.* *Rhamnus obtusifolius*, *Hook. in Torr. & Gray, Fl. 1. p. 685.* *Paliurus Texanus*, *Scheele in Linnæa, 21. p. 580.* Bottom woods of Comale Creek, New Braunfels, &c.; common. A shrub or small tree, with slender shoots and greenish-white bark; several times flowering between March and September. No. (588) is the same plant in flower, and in ripe fruit, the fruit ripening the season after flowering.¹

¹ Another species, gathered by Dr. Gregg between Matamoras and Mapimi, may be thus characterized:—

ZIZYPHUS LYCIOIDES (*sp. nov.*): *glabrata*; *ramis valde spinosis*; *foliis oblongo-linearibus parvis integerrimis coriaceis*; *pedunculis brevissimis 3-5-floris*; *drupa subglobosa monosperma*.—The sharp and straight thorns are from one to two inches in length: the specimen shows no stipular spines. Leaves half an inch long, one or two lines wide, obtuse. Fruit, of the size of that of the Buckthorn, said by Dr. Gregg to be black and edible.

365. *COLUBRINA TEXENSIS*: caule ramosissimo, ramulis divaricatis cinereis; foliis elliptico-cuneatis oblongisve glanduloso-denticulatis breviter petiolatis alternis plerumque in nodos fasciculatis supra pubescentibus nunc glabris subtus sericeo-villosis fulvis penninerviis basi trinerviis; pedunculis fasciculatis paucis petiolo longioribus calyceque (laciniis patentibus) villosis. — *Rhamnus?* *Texensis*, *Torr. & Gray, Fl.* 1. p. 263. — Prairies and borders of woods on the Guadalupe and Comale. (Also communicated by *Mr. Wright*.) Flowers in May; fruits in June. — Shrub 2 to 5 feet high, rigid. Leaves three fourths of an inch long. Pedicels two to four together from the centre of the cluster of leaves, two or three lines long in flower, in fruit becoming half an inch or more in length. Calyx-tube adherent to the ovary and filled with the broad annular disk; the lobes widely spreading, broadly triangular-ovate, nearly herbaceous. Petals unguiculate, shorter than the subulate-filiform filaments, scarcely equalling the calyx. Styles three, sometimes four, united at the base, stigmatose on the inner face above. Ovary immersed in the adherent disk. Fruit dry and capsular at maturity, tricocous, somewhat three-lobed, globular, girt at the base by the persistent and adherent base of the calyx, three-seeded. Seeds lenticular, plano-convex, shining. Cotyledons plane; albumen very thin. This shrub, of which we at length are provided with complete specimens, has nearly the flowers of a *Zizyphus*, but the fruit of a *Ceanothus*. It appears to be a genuine *Colubrina*.

366. *CONDALIA OBOVATA*, *Hook. Ic. Pl.* t. 287; *Torr. & Gray, Fl.* 1. p. 685; *Gray, Gen. Ill.* 2. t. 164. "On slopes, near watercourses; common from Matagorda Bay to New Braunfels. — Shrub, or small tree, sometimes 20 to 30 feet high, with a trunk one foot in diameter. Flowers very sparse. August, September. The wood dyes blue. Called here *Blue-wood* or *Logwood*." No. (589) is the same plant, in flower and fruit.

† *CEANOTHUS OVALIS*, *Bigel. Fl. Bost. ed. 2. p. 92.* *C. ovatus*, *Desf. Arb. 2. p. 381.* Rocky heights, along the Pierdenales and Sabinas. June (in fruit.)

LEGUMINOSÆ.

(590.) *VICIA LEAVENWORTHII*, *Torr. & Gr. l. c.* W. Texas.
 367. *PHASEOLUS RETUSUS*, *Benth. Pl. Hartw. No. 59, p. 11.* *P. maculatus*, *Scheele in Linnæa, 21. p. 465.* On rocky or gravelly soil in the dry bed of the Cibolo River. June, September. "Prostrate; the stems often running for twenty feet." In cultivation it is more or less voluble. The leaflets are thicker in texture and more reticulated than those of *P. perennis*, not acuminate, but obtuse or many of them retuse. They are more dilated at the base than in my specimen of Hartweg's plant, but otherwise, there is little perceptible difference. Mr. Wright met with it all the way to the Rio Grande, and Dr. Wislizenus in Chihuahua.

† *P. DIVERSIFOLIUS* was found on the Liano; and *APIOS TUBEROSA* and *CLITORIA MARIANA* on the Pierdenales.

368. *GALACTIA TEXANA*: procumbens, subvolubilis, cinereo-tomentosa, trifoliolata; foliolis ovalibus retusis setaceo-mucronatis supra cinereo-puberulis subtus sericeo-canescen-
 tibus; racemis paucifloris folio brevioribus petiolum raro superantibus; legumine eximie falcato sericeo folia excedentibus. *Lablab Texanus*, *Scheele in Linnæa, 21, p. 467.* — New Braunfels. August. Root ligneous. Leaflets 1 to 1½ inch long, in appearance intermediate between those of *G. mollis* and *G. canescens*, less whitened beneath than in the latter. Flowers little larger than those of *G. mollis*, with hirsute, more attenuated and longer calyx-lobes. Legumes 2½ inches long, linear, strongly falcate, densely silky, 9–10-seeded. I do not observe the muricate-tuberculate sutures mentioned by Scheele. Seeds oval, chestnut-colored, with a brown hilum, not strophiolate. The species is nearest allied to what I take to be *G. mollis*, *Michx.* Mr. Scheele, with his usual wisdom, provisionally refers the plant (without fruit) to *Lablab*!

369. *RHYNCHOSIA TEXANA*, *Torr. & Gr. Fl.* 1. p. 687. New Braunfels; prostrate, or climbing over bushes. August. It has the aspect of a *Galactia*.

370. *GALACTIA CANESCENS*, *Benth. Comm. Legum. Gen.* p. 62; *Torr. & Gr. Fl.* 1. p. 288, & p. 687. *Heterocarpæa Texana*, *Scheele in Linnæa*, 21, p. 467. Rocky soil, New Braunfels. June, September. "Often flowering a second time after the rains in September, as is the case with many other plants." — Stems creeping; many of the racemes becoming subterranean, and bearing globular, membranaceous legumes which are filled by a single large seed; while the legumes which fructify above ground are linear-oblong, canescent, and 4–5-seeded; as is mentioned in the *Fl. N. Amer.* p. 687. On this Mr. Scheele has founded his new genus *Heterocarpæa*, which he thinks is very distinct from any other known!

(591.) *G. HETEROPHYLLA* (*sp. nov.*): cano-sericea; caulibus gracilibus e basi suffruticosa decumbentibus; foliolis oblongis subcuneatis obtusis retusisve mucronulatis, aut 3 lateralibus a terminali paulo remotis brevissime petiolulatis, aut in plurimis 4–5, accessoriis cum lateralibus digitatim insertis; racemis brevibus paucifloris; calycis laciniis triangulari-oblongis sericeis corolla multo brevioribus, superiore bidentato; legumine puberulo recto inferne angustato 3–6-spermo. — On the Liano, October. — Remarkable for its prevailingly 4–5-foliolate leaves, although some in each specimen are only 3-foliolate; the additional leaflets are mostly rather smaller than the others, and inserted with the lateral pair. Stems 6 to 20 inches long. Leaflets half an inch long, thickish, silky-canescant, especially underneath, with a closely appressed and silvery pubescence; the veins rather prominent underneath. Stipules subulate: stipels deciduous. Peduncles 1–4-flowered. Corolla nearly half an inch long, fully twice the length of the calyx; the vexillum appears to have been pale yellow! the other petals rose-color. Legume $1\frac{1}{2}$ inches long. Seeds, style, &c. as in the genus to which I refer this in some respects anomalous species.

371. *SESBANIA MACROCARPA*, *Muhl.*; *Torr. & Gr. Fl.* 1. p. 293. Banks of Comale Creek. August, September.

(592.) *TEPHROSIA LINDHEIMERI* (*sp. nov.*): caule prostrato nunc adscendente flexuoso ramoso pube brevi tomentuloso; foliolis 7–13 late obovatis cuneatisve sæpe retusis mucronulatis subtus præsertim incano-sericeis; stipulis brevibus subulatis; racemis laxè multifloris; lobis calycis subulatis tubo sublongioribus; legumine pube brevi densa velutino.—Muskit prairies, on the Llano. August. (Also gathered by Mr. Wright in Western Texas.) Stems rather stout, 3 or 4 feet long, from a tuberous and ligneous root. Leaflets 8 to 12 or sometimes 18 lines in length, roundish-obovate or broadly cuneiform; the pairs rather distant on the rachis. Raceme 7–9 inches long, exceeding the leaves, 20–30-flowered. Corolla nearly as large as that of *T. onobrychoides*, over half an inch broad, purple.

372. *PSORALEA CUSPIDATA*, *Pursh. Fl.* 2, p. 741; *Torr. & Gr. Fl.* 1, p. 688. *P. cryptocarpa*, *Torr. & Gr. l. c.* p. 301. *P. Rœmeriana*, *Scheele in Linnæa*, 21, p. 463.¹ New Braunfels; sparsely on rocky prairies. May, June. “Flower entirely blue.”—The caudex or root often bears a globular tuber, as in *P. esculenta*, &c. The spikes become oblong or cylindrical, and looser in fruit; the bracts are ovate-oblong or obovate, and abruptly cuspidate-acuminate; the calyx is somewhat gibbous, and its lower lobe soon elongated; points in which the species is not quite correctly described in the Flora. The legume is utricular, membranaceous and fragile.

(593.) *PSORALEA CYPHOCALYX* (*sp. nov.*): striguloso-subcinerea, caulibus e caudice lignescente tuberifero erectis simplicibus; foliis digitatis 3–5-foliolatis; foliolis linearibus (majoribus 3-pollicaribus) mucronulatis supra glabratis nigroglandulosis; stipulis subulatis; spicis longiuscule pedunculatis

¹ The *Indigofera Lindheimeriana*, *Scheele in Linnæa*, *l. c.* is evidently *I. Anil*, *L. β. polyphylla*, *DC.*, which I have from Texas by Mr. Wright (although neither Dr. Engelmann nor I have received it from Mr. Lindheimer,) and also from South Carolina, where, according to Mr. Ravenel it occurs not uncommonly in cultivated fields.

interrupte multifloris fasciculis approximatis; bracteis ovatis acuminatis; calycis tubo valde obliquo postice saccato pedicillum bis terve excedente, lobis lanceolatis acuminatis margine albo-villosis, superioribus ultra dimidium coalitis. — Rocky prairies on the Cibolo and Pierdenales, growing sparsely. May, June (in flower.) — Caudex perpendicular, dilated below the summit into a globular tuber, of nearly an inch in diameter. Stem 2 to 3 feet high, simple, or sparingly paniculate at the summit. Lower petioles nearly as long as the leaflets; the latter 2 or 3 lines wide. Spikes dense, one or two inches long. Flowers apparently pale purple, fully half an inch in length; the pedicels scarcely a line long. Calyx conspicuously glandular; the tube remarkably one-sided, nearly straight on the lower side, but strongly gibbous-saccate or almost calcarate on the upper! The free apices of the nine filaments are very short, all antheriferous; five of them spatulate, the four intermediate triangular and shorter. Ovary glabrous. Fruit not seen.

(594.) *P. HYPOGÆA*, Nutt., var. *SCAPOSA*: pedunculis petiolo v. folia æquantibus, $1\frac{1}{2}$ – $2\frac{1}{2}$ unc. longis. — Stony soil, hills on the Pierdenales, near Fredericksburg. April. (Western Texas, Mr. Charles Wright.) — Tuber globular or pointed upwards, sending forth a slender caudex, beset with membranous scales. From the Canadian River we have specimens gathered by Mr. Gordon, which are intermediate, as to the length of the peduncle, between the Texan plant and that described by Nuttall.

373. *P. FLORIBUNDA*, Nutt. in Torr. & Gray, *Fl.* 1. p. 300. Prairies on Comale Creek. In black, clayey soil, New Braunfels, “growing in patches, many stems from the same base, forming a large and dense bush.” June. — May not this rather than *P. obtusiloba* (of which Mr. Wright has sent characteristic specimens from Texas,) be the *P. tenuiflora* of Pursh and Nuttall?

374. *EYSENHARDTIA AMORPHOIDES*, H. B. K. *Nov. Gen. & Sp.* 6. p. 491, t. 592; Schauer in *Linnæa*, 20, p. 747. E.

Drummondii, Torr. & Gray, *Fl.* 1. p. 690, sine descr. *E. Texana*, Scheele in *Linnæa*, 21. p. 462. — Rocky precipices, Upper Guadalupe. August. Also gathered by Mr. Wright. "Shrub 4 to 7 feet high." Vexillum barely emarginate. Style little curved at the apex. Ovary with two collateral ovules. Legume linear and arcuate or sabre-shaped, compressed, 5 or 6 lines long, sessile, glandular, dotted, with a single oblong seed pendulous from near the apex, empty below, agreeing with those of *E. amorphoides*, as described by Schauer, and as observed in Mexican specimens of Coulter's Collection. The foliage is rather smoother, the vexillum less notched, and the style less hooked than in the Hartwegian specimens of *E. amorphoides*; but those of Coulter and of Dr. Edwards are intermediate; so that I have no reason to think that the Texan plant is a distinct species. The tenth stamen is scarcely free in either. All the specimens show an oval gland near the apex of the style. — A second species, however, with a 4-ovulate ovary, gathered by Dr. Wislizenus, has been characterized by Dr. Engelmann, as below.¹

† *AMORPHA FRUTICOSA*, Linn.; var. *subglabra*; foliolis ellipticis retusis supra nitidis. — On a creek near Fredericksburg. June. — One of the forms of this polymorphous species, nearly the same as the *A. nana*, *Bot. Mag.* t. 2112.

(595.) *A. FRUTICOSA*, Linn.; var. *subglabra*; foliolis oblongis seu lineari-oblongis. *A. Lewisii*, Lodd.! *Cat.* — New Braunfels. Like the last, except that the leaflets are narrower and seldom retuse. I know of no constant characters for distinguishing *A. glabra*, Desf., *A. Caroliniana*, Croome,

¹ "*E. SPINOSA* (*n. sp.*): fruticosa; ramis squamosis rachidi spicarum persistente lignosa spinosis; foliis 6-8-jugis; foliolis minutis ovatis acutis adpresse pilosis; spicis paucifloris; calycis obconico-campanulati dentibus triangularibus obtusis inæqualibus; vexillo profunde bilobo; staminibus subdiadelphis; ovario 4-ovulato et stylo apice uncinato pilosis. — On Lake Encinillas, north of Chihuahua, Dr. Wislizenus; in flower, August and September. — A rough looking, in many respects, remarkable shrub, 2-3 feet high, with black bark. Leaves 4 to 6 or 7 lines long: leaflets 1-1½ lines long. Spikes an inch long, with a stout persistent rachis: flowers at first white, then rose-colored: uppermost (vexillary) filament shortest and almost free, adhering to the tube only at its base: style strongly hooked." — *Engelm. Mss.*

A. nana, *Nutt., Bot. Mag.*, and *A. lævigata*, *Nutt.* from *A. fruticosa*. The *A. Rømeriana*, *Scheele in Linnæa*, 21. p. 461, is doubtless a form of *A. fruticosa* or of *A. paniculata*.

375. *DALEA LAXIFLORA*, *Pursh. Fl.* 2. p. 741; *Torr. & Gray, Fl.* 1. p. 307. *D. penicillata*, *Moric. Pl. Nouv. Amer.* t. 45. Dry and rocky prairies, between the Rio Colorado and Guadalupe. June, in flower. September, in fruit.

† *D. POGONATHERA*, *Gray, Pl. Fendl.* p. 31. On the Llano. October. — Stems a span high, numerous, from a thickish, apparently perennial root. Vexillum violet-purple.

† *D. AUREA*, *Nutt. Gen.* 2. p. 101. Dry prairies, Upper Guadalupe. June.

† *D. NANA*, *Torr. in Gray, Pl. Fendl.* p. 31. Post-Oak-openings, on the Pierdenales. June. Also gathered by Mr. Wright on the Rio Grande, and by Mr. Gordon on the Arkansas.

376. *D. FRUTESCENS* (*sp. nov.*): glaberrima; caulibus lignescentibus ramosis glandulis tuberculiformibus raris obsitis; foliolis 6–8-jugis glaucescenti-æruginosi obovatis retusis obcordatisve manifeste petiolulatis subtus (rachique in foliis summis submarginata) grosse glandulosis; spicis paniculatis brevibus paucifloris; bracteis coriaceis ovatis muticis glandulosis calycem vix æquantibus caducis; tubo calycis sessili glabro glandulis magnis cerinis ornato, dentibus brevibus triangulato-subulatis margine villosis; corolla violacea, carina maxima vexillo plus duplo longiore. — Rocky hills, and high plains, along the margin of thickets, on the Guadalupe, Sabinas, and Pierdenales. July, August. (Western Texas, and on the Rio Grande, *Mr. Charles Wright*. Monterey, N. Mexico, *Dr. Edwards in Herb. Torr.*) This is a shrubby species, a foot or two in height, and totally distinct from *D. citriodora*, for which I at first mistook it. The flowers are more like those of *D. nutans*, but they are much fewer, sessile, the calyx remarkably glandular; the leaflets are of a different form, not at all crenate; and there is a gland,

instead of a subulate stipel, on the rachis at the insertion of each leaflet.¹

(596.) *ASTRAGALUS CARYOCARPUS*, *Ker, Bot. Reg. t. 176; Torr. & Gray, Fl. 1. p. 331.* Clayey soil, near Victoria. February, in flower. Also (598) in Western Texas, in flower and fruit.

(597.) *A. MEXICANUS*, *Alph. DC. Pl. Rar. Hort. Genev. not. 5. p. 17. t. 3.* *A. trichocalyx*, *Nutt. in Torr. & Gray, Fl. l. c.* Prairies on the Lower Guadalupe, west of Victoria. February, in flower. — This and the last species, although often confounded in herbaria, are manifestly distinct in the living state. *A. caryocarpus* has more strigose and somewhat canescent, oblong or linear-oblong leaflets, close and fine hairs on the calyx, sometimes blackish, a violet purple corolla, the flower about two thirds of an inch long, and ovate pointed legumes, which are seldom more than two thirds of an inch in diameter. *A. Mexicanus* is a larger plant in all its parts, with smoother and greener foliage; the leaflets varying from roundish-obovate to oblong; the flowers an inch long; the calyx villous, (often very densely) with soft, white hairs; the corolla barely tinged above with pale violet, or nearly white; and the very turgid globose-ovoid legumes are obtuse and over an inch in diameter.²

¹ *Petalostemon virgatum*, *Scheele in Linnæa*, 21, p. 461, is plainly the No. 42, *Pl. Lindh.* and No. 137, *Pl. Fendl.*, viz. a pubescent variety of *P. violaceum*, perhaps connecting that species with *P. decumbens*. The leaves in some specimens are indeed 7-foliolate, in others both 5-foliolate and 3-foliolate. — *Trifolium Ræmerianum*, *Scheele, l. c.* is manifestly the *T. amphianthum*, *Torr. & Gray, Fl. 1. p. 316.*

² This Texan plant is clearly De Candolle's *A. Mexicanus*; but Dr. Engelmann thinks it distinct from the *A. trichocalyx*, of Missouri; on account of the still larger and pale purple flowers, and shorter calyx-teeth. The remarks above are chiefly founded on living plants of *A. trichocalyx* and *A. caryocarpus*, raised from seeds furnished by Dr. Engelmann from St. Louis.

Mr. Wright has communicated specimens of a new Texan species of *Astragalus*, and also seeds from which the plant has been raised, during the past summer in the Cambridge Botanic Garden.

ASTRAGALUS WRIGHTII (*sp. nov.*): annuus, pumilus, hirsuto-canescens; caule subsimplici; stipulis subulatis liberis; foliolis 3-5-jugis oblongis acutiusculis; pedunculis folio longioribus paucifloris; floribus capitatis; calyce hirsutissimo, lobis lineari-subulatis attenuatis corollam violaceam superantibus legumine oblongo hirsuto subtereti fere biloculari 6-4-spermo dimidio brevioribus. — Texas, near Austin, Mr.

(599.) *ZORNIA TETRAPHYLLA*, *Michx. Fl.* 2. p. 76. Post-Oak openings west of the Pierdenales. June.

(600.) *LUPINUS TEXENSIS*, *Hook. Bot. Mag.* t. 3492. New Braunfels. Not distinct, I fear, from *L. subcarnosus*.

377. *CERCIS OCCIDENTALIS* (*Torr. ined.*): frutex; foliis subreniformibus obtusissimis; leguminibus oblongis obtusissimis breviter apiculatis vix stipitatis. — *C. Siliquastrum*, var. *Benth. Pl. Hartw.* No. 1706, p. 307. — Var. floribus etiam paulo minoribus, foliis supra nitidioribus. *C. reniformis*, *Engelm. Mss.* Rocky plains of the Upper Guadalupe. March, in flower; June, with ripe fruit. A shrub, forming thickets, never becoming a tree. — This is entirely distinct from *C. Canadensis*; but does not differ from the Californian plant of Fremont and of Hartweg, except that the flowers are a little smaller still, being no larger than those of *C. Canadensis*, and the full-grown leaves are rather thicker and more shining above. The Texan and the Californian plants agree in their short and scarcely stipitate pods (only 2 or $2\frac{1}{2}$ inches long, and two thirds of an inch broad,) which character, with the size of the flowers, would seem abundantly to distinguish it from *C. Siliquastrum*, the legumes of which, including the manifest stipe, are six, or at least five inches in length. (Dr.

Charles Wright. — The plants from seeds sown in the spring blossom from midsummer to autumn. Stem a span high, seldom branched. Leaflets 4 lines long, the upper surface sparsely, the lower densely beset, like the stem, &c., with villous-hirsute loosely appressed hairs. Peduncles in fruit 2 or 3 inches long. Legumes half an inch long, densely hirsute, straight, rather acute, tipped with the short style, often carrying away the inconspicuous corolla upon its apex as it enlarges, nearly erect, only three or four produced in each capitulum, scarcely twice the length of the persistent subsessile calyx. Bracts subulate, the lower resembling the calyx-lobes. — Mr. Wright has also detected *Oxytropis Lamberti*, *Pursh*, in Western Texas; and likewise a unifoliate *Desmodium*, namely: —

DESMODIUM WRIGHTII (*sp. nov.*): caulibus gracilibus ramosis puberulis; foliis unifoliolatis breviter petiolatis; foliolo membranaceo oblongi-ovato obtuso basi subcordato fere glabro; stipulis stipellisque subulatis minimis; racemis laxis; tomento 3-4-articulato breviter stipitato, articulis inæquilateris ovalibus. — Austin, Texas, *Mr. Charles Wright.* — Stems one or two feet high. Leaves veiny, paler and minutely pubescent underneath, mucronulate; the lower two inches long, on petioles half an inch long; the upper successively narrower and smaller, on shorter petioles. Legume less than an inch long; the stipe as long as the staminal tube. 12

Gregg has gathered fruiting specimens of the same plant in the high lands near Saltillo, Mexico, in 1848.) — Dr. Engelmann states that it is peculiar to the limestone districts of Middle Texas.

378. SOPHORA (STYPHNOLOBIUM) AFFINIS, *Torr. & Gray, Fl. 1. p. 390.* Margin of Cotton-wood groves along the Rio Colorado, above Bastrop: August (in fruit); also near New Braunfels and San Antonio, common; April, in flower. — “A small tree, 10 to 12 feet high, the trunk 4 to 8 inches in diameter, rarely a small shrub; the annual shoots with green bark, fragile; the wood very heavy.” Leaflets less than an inch long, nearly of the same hue both sides, retuse or very obtuse. No. 601 is the same plant, from New Braunfels.

379. SOPHORA (DERMATOPHYLLUM) SPECIOSA, *Benth. Mss.* *Dermatophyllum speciosum, Scheele in Linnæa, 21. p. 459.* *Sophora sempervirens, Engelm. Mss.* “On the western part of Matagorda Bay, where it forms groves. Also sparsely on rocky hills, margins of Cedar woods along the Guadalupe, near New Braunfels, &c. Flowers in February. A small tree, about 30 feet high; the wood yellow, hard, and heavy, called *lignum-vitæ*. Flowers, showy, blue, sweet-scented, exhaling nearly the fragrance of violets. The tree forms small groves on the shores of Matagorda Bay, where it is the only fire-wood. The wood dyes yellow.” Also gathered by Berlandier, and by Mr. Wright. The large, woody pods, two to four inches long, are sometimes constricted between the seeds, sometimes barely torose. Mr. Benthham remarks, in *Herb. Torr.*, that, “at present *Dermatophyllum* can only be admitted as a section to include *S. speciosa*, *S. secundiflora*, and an intermediate species collected by Dr. Gregg in Northern Mexico, until the pods of all the genus are better known.” — No. (602) is the same species from New Braunfels, flowering in March, either a shrub or a small tree.

(603.) HOFFMANSEGGIA JAMESII, *Torr. & Gray, Fl. 1. p. 393; Gray, Pl. Fendl. p. 38.* Stony soil on the Liano. October; the second flowering, after the burning of the

prairies. Shrubby, many stems form a large ligneous root, one or two feet high. Upper surface of the leaves smooth, and with the petals, destitute of the black glands. "Petals yellow; stamens red."¹

380. *CASSIA* (*CHAMÆSENNA*) *LINDHEIMERIANA* (*Scheele in Linnæa*, 21. p. 457): perennis, undique tomento sericeo mollissimo albicans; foliolis 6–8-jugis oblongis utrinque obtusis basi inæqualibus aristato-mucronatis subtus argenteo-sericeis; glandula cum stipite tomentoso setiformi inter omnia paria; stipulis subulatis caducis; racemis folium æquantibus plurifloris; legumine lato-lineari complanato parce pilosulo. — Rocky plains and margin of woods, New Braunfels, &c. September. Also found by Mr. Wright from San Marcos to the Rio Grande. — Stems 4 or 5 feet high, from a thick, perennial root, clothed like the petioles, peduncles, stipules, &c. with a dense velvety tomentum. Leaflets from one to nearly two inches in length, silky above, silvery-sericeous beneath, tipped with a very conspicuous mucro. The setiform gland, with its stipe, between each pair, is a line long. Petals golden yellow with dark veins, half an inch in length. Anthers 7, chocolate-colored; the three upper stamens rudimentary. Legumes 2 inches long, over 2 lines wide. Seeds as in the section. — A species apparently allied to *C. argentea* and *C. mollissima*, *H. B. K.*

¹ The subjoined, very distinct species, comes from the southern borders of Texas.

HOFFMANSEGGIA CAUDATA (*sp. nov.*): frutescens; ramis glaberrimis superne rachique foliorum glandulis minimis rariter conspersis; foliis bipinnatis; pinnis 2–3-jugis abrupte 8–10-foliolatis, cum impari elongata 24–30-juga; foliolis glaberrimis omnino glandulosis rotundatis oblique subcordatis venosis; stipulis bracteisque caducis; racemo sparsifloro; legumine acinaciformi dilatato glanduloso. — Sandy soil, between the Nueces and the Rio Grande, Texas, *Mr. Charles Wright*. August, September. — This species is remarkable for its smoothness (some small tack-shaped glands only occurring on the calyx, or a few still minuter ones scattered on the upper part of the branches and the petioles,) and for the elongation of the terminal pinna, which is two or three inches in length, and bears many pairs of leaflets; while the lateral ones are scarcely an inch long. The leaflets are about two lines in length, thickish, obscurely mucronulate, subsessile, oblique. Raceme sparsely 6–9-flowered. Legume nearly two inches long and two thirds of an inch wide, flat, reticulated, furfaceous-glandular, and roughened with subsessile blackish glands. There are no expanded flowers; the raceme of one specimen bears unopened flower-buds.

381. *C. (CHAMÆSENNA) RÆMERIANA*, (*Scheele, l. c.*): caule suffruticoso cinereo-pubescente; foliolis unijugis e basi inæquilatera rotundata lanceolatis acutiusculis mucronatis supra puberulis subtus strigoso-pubescentibus; glandula subulata interposita; stipulis setaceis caducis; racemis paucifloris folium superantibus; legumine lineari-oblongo basi attenuato subfalcato glabello. — Rocky plains of the Upper Guadalupe. August. Also communicated by *Mr. Wright*. — Plant one or two feet high, much branched. Leaflets about two inches long, gradually tapering from the rounded inæquilateral base, sometimes a little falcate, beneath somewhat cinereous with fine strigose hairs. Petals yellow, with brownish veins, one third of an inch in length. Legumes an inch or little more long, with a prominent border, minutely and sparsely strigose.¹

† *C. PUMILIO (sp. nov.)*: subcaulescens e caudice lignescente, strigulosa; foliolis unijugis linearibus subtrinervatis; glandula nulla; petiolo in appendicem setaceam producto; stipulis setaceo-subulatis petiolo basi adnatis rigidis persistentibus; pedunculis unifloris folio longioribus infra apicem unibracteatis; sepalis obtusissimis; staminibus 3 superioribus difformibus castratis; ovario glaberrimo; fructu ignoto. — On the Liano and Pierdenales. “Only two small specimens were seen.” Rio Grande, Texas, *Mr. Charles Wright*. The caudex of this singular dwarf species scarcely rises out of the

¹ From the Rio Grande, Texas, as well as from Northern Mexico, we have the subjoined species, which is said by Mr. Benthams (in *Herb. Torr.*) to be “a very distinct, new species, apparently near *C. bauhiniæfolia*.” It belongs, however, to the section *Chamæsenna*.

CASSIA (CHAMÆSENNA) BAUHINIODES (sp. nov.): humilis, suffruticosa, hirsuto-sericea; foliolis unijugis rariusve bijugis oblongis vel subovatis utrinque rotundatis inæquilateris sericeo-canescens; glandula interposita; stipulis setaceis persistentibus; pedunculis 2-3-floris; legumine membranaceo turgido rectiusculo hirsuto. — On the Rio Grande, Texas, August (in fruit,) *Mr. Charles Wright*. Santa Rosa, Northern Mexico, May (in flower only,) *Dr. Gregg*. Between El Paso and Chihuahua, August, *Dr. Wislizenus*. — The plant of *Dr. Wislizenus* is 10 inches high, larger in all its parts and less canescent than the other specimens, which are from three to six inches high. The peduncles in the latter are shorter than the leaves. The three upper stamens are rudimentary; the linear-oblong anthers open only by a terminal pore. Legumes an inch long, slightly curved upwards, very obtuse, and with an incurved apiculate tip.

ground. Leaves crowded. Leaflets an inch or less in length, one to two lines wide, rather rigid, as long as the petiole. Peduncle one or two inches long, slender. Corolla two thirds of an inch in diameter, pale yellow in the specimens. The seven perfect anthers open by a terminal pore; the three upper stamens are abortive, as in the section *Chamæsenna*, to which, so far as can be told in the absence of the fruit, this species would seem to belong.

382. *ALGAROBIA GLANDULOSA*, Torr. & Gray, *Fl.* 1. p. 399. Common on the Guadalupe, &c. May, in flower; August, with unripe fruit.—The *Muskit* “forms open woods in high, rocky plains, and wet, clayey bottoms. Trees from 30 to 40 feet high, with few and large, erect branches; the trunk often from one to two and a half feet in diameter; the heart-wood dark reddish brown; but often occurring as a small tree or shrub. Important as furnishing the only fire-wood in Western Texas; also for its edible fruit.” *Lindheimer*.—The foliage appears different from that of *A. dulcis*, *Benth.*, in Hartweg’s Mexican Collection.

383. *MIMOSA LINDHEIMERI* (*sp. nov.*): fruticosa, glabra, v. sub lente minutim puberula; aculeis infrastipularibus validis geminis (nunc solitariis ternisve) recurvis, petiolaribus minutis raris v. nullis; stipulis subulatis etiam spinescentibus; pinnis 4–6-jugis; foliolis 8–12-jugis oblongis; pedunculis folium subæquantibus; capitulis globosis; bracteolis minutis; floribus 5-meris glaberrimis; legumine glabro lineari-oblongo seu falcato margine aculeis validis sparsis subuncinatis armato.—Rocky plateaus near New Braunfels, and on the Upper Guadalupe, not seen on the Pierdenales. July, in flower, and with young fruit: August, with ripe fruit.—Shrub two or three feet high; the branches armed with very stout, compressed, infrastipular aculei, which are sometimes solitary, geminate, often usually in threes. Occasionally there are one or two minute prickles on the rachis of the leaves. Calyx purple, very glabrous. This species is nearly allied to *M. acanthocarpa*, of Mexico, from which it differs in the want

of pubescence, except a mere trace under the lens, and in the spinescent stipules. The valves of the pod somewhat incline to break transversely into pieces.

(606.) *M. FRAGRANS* (*sp. nov.*): fruticosa, erecta, glaberri-
ma; aculeis infrastipularibus solitariis subrecurvis; petiolis in-
ermibus gracilibus; pinnis 1–3-jugis (in ramis floridis sæpis-
sime unijugis); foliolis 5–6-jugis lineari-oblongis; pedunculis
axillaribus sæpius fasciculatis folio æqualibus capitulum glo-
bosum gerentibus; floribus 5-meris 10-andris glabris; petalis
liberis calyce parvo quadruplo longioribus; legumine lineari
falcato 6–8-articulato membranaceo glaberrimo inermi, rari-
usve margine aculeis 1–3 armato. — Rocky soil, on the
Pierdenales. April, in flower (606); May, with immature
fruit (607). (Also gathered near Austin by *Mr. Wright*). —
“Shrub 3 or 4 feet high, covered at the season of blossoming
with the heads of light purplish-red, fragrant flowers.”
Aculei short and stout. Leaflets rather thin, not crowded as
in the preceding species, rather sparse on the sterile branches,
where they are two lines long; on the flowering branches
smaller. Peduncles nearly an inch in length, larger than the
head. The unripe pods are two inches long; strongly fal-
cate, the margins sinuate so that the joints are well defined,
and the transverse lines at which the valves will separate are
already evident. — This species is allied to *M. borealis*, *Gray*,
Pl. Fendl. (which much resembles *M. depauperata*, *Benth.*)
of which I think I have a Texan specimen from *Mr. Wright*;
but the pinnæ are much longer, with more numerous and
narrower leaflets, and the pods are different. It is perhaps
the same as a North Mexican species of *Dr. Gregg*, indicated
by *Mr. Benth*am (in *Herb. Torr.*) as “*Mimosa, n. sp. near M.*
terniflora,” a species which I do not find anywhere enume-
rated.¹

¹ On the Rio Grande, Texas, *Mr. Wright* gathered specimens of the subjoined species of the section *Habbasia*, § *Rubicaules*, *Benth.*

MIMOSA MALACOPHYLLA (*sp. nov.*): suffrutescens, pube mollissima undique seri-
ceo-tomentosa; caulibus procumbentibus angulatis petiolisque copiosissime aculea-
tis, aculeis brevibus uncinato-retrorsis; pinnis 4–7-jugis; foliolis 5–8-jugis ovatis

384. *SCHRANKIA PLATYCARPA* (*sp. nov.*): glabra, leviter aculeata; pinnis 4–6-jugis; foliolis oblongis ciliatis aveniis: leguminibus latiuscule linearibus compressis acuminatis aculeis brevibus echinatis pedunculo subduplo longioribus, valvulis planis margine persistente (repleto) fere duplo latioribus. — *Mimosa Rœmeriana*, *Scheele in Linnæa*, 21. p. 456? — Dry, stony, prairies, New Braunfels. April, in flower; September, in fruit. — I have seen this species from other Texan correspondents. It is distinguished from *S. angustata*, in some degree by its rather broader and more ciliate leaflets, and obviously by its legumes, which are about three inches long, but a quarter of an inch in width, flat, and about twice the breadth of the persistent margin; thus confirming Mr. Bentham's remark, that the genus is not sufficiently distinct from *Mimosa*. The valves are rather sparsely, the thickened margin densely, echinate with very short, somewhat uncinatè prickles. From the locality this is most probably the *Mimosa Rœmeriana* of Scheele; but that blundering and unscrupulous propounder of species had not seen the legumes, and his description applies nearly as well to any other *Schrankia*. To the latter genus, so long as it is maintained, the present species must be referred, notwithstanding the flatness of the pod.

385. *DESMANTHUS VELUTINUS* (*Scheele in Linnæa, l. c.*): adscendens v. prostratus e basi suffrutescente; caulibus petiolisque pube mollissima cinereis; pinnis 3–6-jugis, glandula parva concava inter infimas; foliolis 10–20-jugis lineari-oblongis aveniis margine præsertim pilosis; floribus decan-

vel ovali-oblongis mucronatis; panicula racemosa laxa; floribus 5-meris 10-andris; legumine lato-lineari longiuscule stipitato membranaceo glabro nitido inermi 6–8-spermo. — On the Rio Grande, Texas, *Mr. Charles Wright*. August, September, in flower and fruit. Also gathered near Monterey, Northern Mexico, by *Dr. Gregg* and *Dr. Edwards*, without fruit; and east of Rinconada by *Dr. Gregg* in 1848. — Plant with the habit of a *Schrankia*, canescent with a fine and very soft down; the partial and general petioles as well as the stem beset with numerous short uncinatè prickles. Leaflets 3 to 5 lines long. Flowers white, according to *Mr. Wright*, yellowish according to *Dr. Gregg*. Legume two inches or more in length, with a stipe half an inch long, very smooth.

dris; leguminibus linearibus elongatis rectis v. rectiusculis acuminatis lævibus 10–20-spermis; seminibus rhombeo-orbiculatis. — Rocky soil, and on grassy slopes, near New Braunfels. August, chiefly in fruit. Also near Austin, *Mr. Charles Wright*. — A well marked species, which Scheele has described from some of the rather imperfect fruiting specimens gathered by Lindheimer in 1846, in which the legumes are sometimes only an inch and a half long, and a little falcate. But in better specimens, particularly in those of 1847, the pods are straight, from two to three inches long, often 20-seeded. The seeds are not obovate-elliptical, but roundish-obovate, or somewhat rhombic by mutual pressure. It is distinguished from all the species I am acquainted with by its downy stems and minute gland; from *D. depressus* by its pointed pods. — *D. depressus*, *Kunth*, is common at Key West and Cape Florida, and occasionally comes from Texas. There, however, a more common species is the allied *D. acuminatus*, *Benth. in Jour. Bot.* 4, p. 357, which is readily known by its shorter, falcate, and pointed pods. In cultivation it is prostrate. *D. reticulatus*, *Benth.*, has also been received from Mr. Wright.

386. *D. BRACHYLOBUS*, *Benth. Mimoseæ, in Jour. Bot.* 4. p. 358. *D. falcatus*, *Scheele in Linnæa*, 21, p. 455. Wet soil near Comale Creek, &c. May, in flower; August, in fruit. This does not grow in dry, rocky soil, nor the foregoing in wet places, as is stated by Scheele, who has evidently transposed the tickets of these two plants.

387. *ACACIA RÆMERIANA*, *Scheele in Linnæa*, 21. p. 456. Rocky soil, near San Antonio, and from New Braunfels to the Guadalupe. April, in flower; June, in fruit (605). — This would appear to be the *Acacia Ræmeriana* of Scheele, said to have been gathered near Austin by Mr. Römer, except that the flowers are “yellowish-white” (*Lindh.*) instead of rose-color, and the leaves usually bear three pairs of pinnae. The leaflets, 4 to 5 lines long, are membranaceous in the flowering specimens, but firmer in those in fruit. The species be-

longs to Bentham's section *Vulgares*, and subsection *Pennatæ*. The legume is coriaceo-chartaceous, continuous within, flat, linear-oblong or oblong, somewhat falcate, $2\frac{1}{2}$ to 4 inches long, an inch or less in width, raised on a short stipe. Seeds oval, flat, brown. It is said to be a shrub, or small tree, with the stem one or two inches thick. There are specimens of it in Dr. Gregg's North Mexican collection. Another *Acacia* of the latter collection, marked by Mr. Bentham *A. (Ataxacanthæ) n. sp.*, not unlike the above in foliage and fruit, but with a different inflorescence, was found by Mr. Wright from San Antonio to the Rio Grande.¹

(604.) Same as the foregoing, with larger leaflets ; in flower only.

(605.) These are fine fruiting specimens, which I refer to *A. Ræmeriana*, and to them alone the remarks above, as respects the legumes, refer.

ROSACEÆ.

388. *PRUNUS MINUTIFLORA* (*Engelm. ined.*): nana, intricato-ramosissima, glabra, ramulis novellis vix puberulis; foliis parvis ovalibus obovatisve obtusissimis integerrimis aut obsolete parceque denticulatis; floribus solitariis subsessilibus minimis 10–15-andris; calyce turbinato; fructu immaturo subgloboso cano-tomentoso. — Hills and dry slopes between San Antonio and New Braunfels, in large clusters. March, in flower; the unripe fruit (4 lines in diameter) gathered at the end of May. — Shrubs one or two feet high, forming dense masses. Leaves from 3 to 5 lines long, on short, glandless petioles, fascicled, coriaceous, smooth, entire, sometimes tridenticulate or with one or two obscure lateral denticulations, which are at first somewhat glandular. Stipules very minute. Flowers solitary, a line and a half in length; the peduncle shorter than the calyx. "Stamens 10 to 15, in two

¹ Among Dr. Gregg's plants I find well-marked specimens of *A. amentacea*, *DC.*, a species not identified by Mr. Bentham. It was gathered, in flower, near Rinconada.

or three circles, the innermost partially abortive." *Engelm.* — Closely allied to the *Amygdalus microphylla*, *H. B. K.*, and very likely to prove a variety of it, judging from the fragment of that plant which I possess from Schlechtendal. These, with *P. glandulosa*, belong to the subgenus *MICROCERASUS*, *Webb*, characterized by *Spach in Ann. Sci. Nat.* 2. Ser. 19. p. 125; a group "intermediate between the true *Cerasi* and *Prunus* [but referred by these authors to the former] and also nearly allied to some *Amygdali*." It embraces *Cerasus prostrata*, *C. orientalis*, and some other oriental species.

389. *P. RIVULARIS*, *Scheele in Linnæa* 21. p. 594. *P. Tawakonia*, *Lindheimer, Mss.* (which name was doubtless appended to the specimen received by Scheele.) Banks of streams and margins of bottom-woods, forming thickets near the water, rarely on higher places, Upper Guadalupe, and between Comale Creek and the Colorado. March, in flower; June, in fruit. "Shrub from two to six feet high. Fruit ripe in June, of the size of a cherry, or a little larger, acidulated, cherry-red. The Tawakony Indians boil them and eat them with honey. Called *Tawakony Plum.*" *Lindheimer.* — The same plant extends northward into Missouri, and passes, if I mistake not, into an evident form of *Prunus Americana*, or *P. nigra*, if the two species are to be distinguished. *P. Texana*, *Scheele, l. c.* gathered at New Braunfels, by Mr. Römer, is probably the same species.

† *CERASUS SEROTINA*, *DC.*; *Torr. & Gray, Fl.* 1. p. 410. On the Pierdenales. April, in flower. A tree or a large shrub.

(608.) *ROSA FOLIOLOSA*, *Nutt. in Torr. & Gray, Fl.* 1. p. 460. Hills of the Sabinas and Three Creeks. May. — Stems less than a foot high, from a creeping rootstock. "Flower very fragrant."

† *CRATÆGUS COCCINEA* var. ? *MOLLIS*, *Torr. & Gray, Fl.* 1. p. 465. *C. mollis*, *Scheele in Linnæa*, 21. p. 569. Muskit flats near San Antonio. March, in flower. — If this be admitted to rank as a species, it must bear, I believe, the name of *C. subvillosa*, *Schrad.*

ELATINACEÆ.

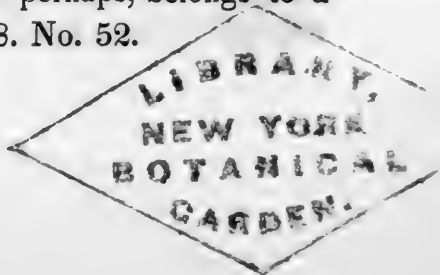
390. ELATINE (MERIMEA SEU BERGIA) TEXANA, *Hook. Ic. Pl. t.* 278; *Torr. & Gray, Fl. 1.* p. 678. E. (Bergella) Texana, *Gray, Gen. Ill. 1.* p. 218. t. 96. In slow flowing rivulets, New Braunfels. August. — This is a pentamerous and decandrous or sometimes pentandrous Elatine, with the aspect of Bergia, for which, in the work above cited, I have indicated a distinct section.

LYTHRACEÆ

† LYTHRUM ALATUM var. OVALIFOLIUM: humile; foliis sub-orbiculatis et ovalibus, floralibus oblongis calyce brevioribus. *L. ovalifolium, Englm. Mss.* Springs of the Pierdenales, on rocks covered by water. October. — Stems a foot high, from long and creeping stolons. Leaves one third of an inch long. This evidently runs into the next.

(609.) *L. ALATUM*, var. PUMILUM: foliis ellipticis oblongisve, caulibus spithamæis. Rocks partly covered with water, in Sister Creek. April. — Mixed with this in the distribution are a few fruiting specimens of

† *L. ALATUM*, var. BREVIFLORUM: glabrum, ramosissimum; ramulis angulatis; foliis linearibus plerisque alternis, floralibus, flores approximatos 6-petalos 6-andros subæquantibus; calyce fructifero campanulato seu brevissime clavato subpedicellato; stylo incluso vel breviter exserto. — Damp rocks on the Guadalupe, near running water. The specimen is the branching summit of an apparently rather tall stem, which has lost its lower leaves. The floral leaves are only from one to three lines long; the flowers are so approximated as at length to form a virgate spike. The calyx even in fruit is barely a line and a half in length. Petals purple, small, those of the later flowers minute or wanting. The style is shorter than the petals, often included, or barely equaling the stamens; but the specimen, perhaps, belongs to a staminal form. Vide *Pl. Lindh.* p. 8. No. 52.



(610.) *L. ALATUM*, var. (*LANCEOLATUM*), *Torr. & Gray, Fl.* 1. p. 481. *L. lanceolatum*, *Ell. Sk.* 1. p. 544. Wet prairies, on the Pierdenales. May. — A form with dwarf stems, a foot or less in height, from long, and deeply subterranean root-stocks or stolons.

† *L. ALATUM*, var. γ . *Torr. & Gr. l. c.* — On the Cibolo. — Leaves mostly alternate.

† *L. ALATUM*, var. *LINEARIFOLIUM*: *caulibus ramosissimis; foliis linearibus plerisque alternis, floralibus calyce subæqualibus.* — Rocks in the Cibolo River. This and the var. *ovalifolium* are two extreme forms, on either hand, of what I take to be one polymorphous species; for which the name *L. lanceolatum*, *Ell.*, would be much more appropriate than that of Pursh. They may embrace several of the tropical American species in the books; but they pass into one another in such a way that Dr. Engelmann and I can fix upon no reliable distinguishing characters.

† *AMMANNIA LATIFOLIA*, *Linn.*; *Torr. & Gr. Fl.* 1. p. 480. (the *A. stylosa*, *Fisch. & Meyer, Ind. Sem. Hort. Petrop.* 7, p. 41): var. *octandra*, *staminibus exsertis, stylo brevi incluso!* *A. Texana*, *Scheele in Linnæa*, 21, p. 588. Upper Guadalupe.

ONAGRACEÆ:

391. *ŒNOTHERA* (*MEGAPTERIUM*) *MISSOURIENSIS*, *Sims, Bot. Mag.* t. 1592; *Torr. & Gr. Fl.* 1, p. 500: var. *A. foliis anguste lanceolatis linearibusve.* *Megapterium Missouriense*, *Spach.* Rocky plains and slopes, on the Pierdenales and Upper Guadalupe, and in the dry bed of the Cibolo. April to July; in flower and fruit. Also gathered by Mr. Wright, who sends seeds from which the plant has been raised in the Cambridge Botanic Garden. “Capsule larger or smaller, orbicular, or elliptical-oblong; corolla from two to five inches in diameter. This runs, by every gradation in the broadness of the leaves into the var. β . *LATIFOLIA foliis lato-lanceolatis vel ovato-lanceolatis*, (*Œ. macrocarpa*, *Pursh.*; *Sweet, Brit. Fl. Gard.* t. 5. *Megapt. Nuttallii*, *Spach.*) Nor, with both

plants in cultivation, do I discern any distinction in the flowers or pods. On the Upper Platte and Canadian, Fremont and Mr. Gordon have gathered specimens in which even the full-grown leaves &c. are silvery-canescens; namely, var. γ . *INCANA*: foliis lanceolatis vel ovatis undique argenteo-incanis.

392. *Æ.* (*LAVAUXIA*) *TRILOBA*, *Nutt. in Jour. Acad. Philad.* 2. p. 118; *Hook. Bot. Mag.* t. 2566; *Torr. & Gray, l. c.* *Æ. Rœmeriana*, *Scheele in Linnæa*, 22. p. 154. Muskit flats, New Braunfels. March, April. In cultivation, and I think also in the wild state, this is a biennial. It forms a dense cone of pods at the crown, which rises to the height of two or three inches in the course of the season, and the root does not survive the winter. The flowers, which open about sunset, are cream-colored or nearly white.

393. *Æ.* (*MERIOLOX*) *SERRULATA* δ . *SPINULOSA*, *Torr. & Gray, Fl.* 1. p. 502; subvar. *floribus*, ut in No. 238, *maximis*, calycis fauce cum stigmate sæpius atropurpurea interdum fusca v. flava. — Rocky banks of the Cibolo River. April. In cultivation, as in the wild plant, the throat of the calyx and the disk-shaped stigma, one or both, are sometimes deep black-purple, sometimes brownish or yellow. The plant forms rather stout and decumbent woody stems, two or three feet long, producing a great number of branches, and flowering throughout the summer.

394. *Æ. SERRULATA*, ϵ . *PINIFOLIA*, *Engelm.*: foliis angustissimis fere filiformibus sæpe fasciculatis marginibus revolutis integris; floribus maximis (ut in præcedente). *Æ. capillifolia*, *Scheele in Linnæa*, 21. p. 577. Rocky prairies, New Braunfels. April. — This is just the *Æ. serrulata* var. *spinulosa*, except that the leaves are extremely narrow. It is vain to attempt to erect the varying forms of this and other polymorphous *Ænotheræ* into separate species.

(55.) *Æ. SPECIOSA*, *Nutt.* New Braunfels, March.

(53.) *Æ. DRUMMONDII*, *Hook.* Galveston. March to May.

† *Æ. JAMESII* (*Torr. & Gray, Fl.* 1. p. 693): pube ap-

pressa cinereo-canescens; caule erecto elato (5–10-pedali) lignescente; foliis oblongo-lanceolatis acutis repando-denticulatis; spica multiflora conferta; tubo calycis prælongo (4–5-unciali) canescente crassiusculo apice ampliato segmentis 2–3-plo ovario multoties longioribus; petalis flabelliformibus maximis (2–3-pollicaribus) stylum vix æquantibus; stigmatibus prælongis; capsula cylindracea subcinerea. — Banks of rivulets on the Upper Guadalupe; also on the San Fernando and the Liano. August. — Cultivated from Texan seeds, this most showy and almost gigantic species flowers in October, either as an annual or a biennial, bearing profusion of flowers, of which an unusual number are open at the same time. Although altogether like that of an ordinary annual or biennial, the tall stem becomes perfectly woody below, and often two inches in diameter at the base. The expanded corolla is four or five inches in diameter, as large as in *Æ. Missouriensis*; the anthers three fourths of an inch, and the stigmas half an inch, in length.¹

395. *LUDWIGIA NATANS*, *Ell. Sk.* 1. p. 581; *Torr. & Gray, Fl.* 1. p. 526. *L. fluitans*, *Scheele in Linnæa*, 21. p. 580. Comale Spring, in clear rivulets. May, in flower and fruit. — This is Elliott's plant in all respects.

† *L. PALUSTRIS*, *Ell. l. c.* On the Liano. November.

(240.) *GAURA DRUMMONDII*, *Torr. & Gray, Fl.* 1. p. 517. New Braunfels, April.

(241.) *G. PARVIFLORA*, *Dougl. in Hook. Fl. Bor.-Am.* San Antonio.

(60.) *G. SINUATA*, *Nutt.*; *Torr. & Gray, l. c.* New Braunfels.

(611.) *GAURA SUFFULTA* (*Engelm. Mss.*): annua; caule 1–2-pedali pilis longis patentibus barbati-villoso; ramulis floriferis cum floribus bracteisque glaberrimis; foliis pilosiusculis glabratis lanceolatis utrinque attenuatis repando-sub-

¹ *Æ. uncinata*, *Scheele in Linnæa*, 21. p. 578. is not to be identified by the vague description. It was gathered on a prairie near Houston by Mr. Römer, and is not likely to be new.

dentatis, inferioribus oblongo-lanceolatis petiolatis; floribus 4-meris 8-andris; bracteis oblongis ovario longioribus e basi brevi persistente caducis; rachi ideoque squarroso-dentata; tubo calycis ovario longioribus segmentis brevioribus; nuce sessili alato-tetraquetra ovato-pyramidata glabra, faciebus concavis unicostatis lævigatis aut basi parce subtuberculatis. —

Cedar woods, in sandy and rocky soil, New Braunfels. May, June, in flower and fruit. — Plant, with much the aspect of *G. Drummondii*; but the leaves smoother, less toothed, and "longer petioled than any other;" the stem villous or hirsute below with long spreading hairs, while the rachis, calyx, bracts, &c. are perfectly glabrous. The petals appear to be paler than those of *G. Drummondii*, and the fruits are closely sessile, without any narrowed base or stipe. It is much more closely related to the *Gaura tripetala*, *Cav.*; judging from Spach's description, and from Texan specimens with triquetrous fruit and trimerous flowers, gathered by Mr. Wright, which agree well with the character.¹

† MYRIOPHYLLUM HETEROPHYLLUM, *Michx.* With the next.

† PROSERPINACA PECTINACEA, *Lam.* On the Pierdenales.

LOASACEÆ.

396. MENTZELIA OLIGOSPERMA, *Nutt.*; *Torr. & Gray, Fl.* 1. p. 533. Thickets, on high, rocky plains of the Upper Guadalupe. August.

† MENTZELIA (BARTONIA) NUDA, *Torr. & Gray, Fl.* 1. p. 535; *Gray, Pl. Fendl.* p. 47. Springs of the Cibolo, Guadalupe, and Pierdenales, in rocky soil. July, October. "Stems three to five feet high: petals expanded in the evening, not in the morning."

† EUCNIDE BARTONIOIDES, *Zucc. Pl. Hort. Bot. Monac. fasc. 5, in Abhandl. Baier. Akad. Wissensch.* 4. t. 1. Mi-

¹ *Gaura hirsuta*, *Scheele, in Linnæa*, 21. p. 580, described from specimens gathered by Römer between Bastrop and Austin, does not accord with the present species, but is likely to be either *G. Lindheimeri* or *G. biennis*. *G. Ræmeriana* of the same author, from New Braunfels, described without the fruit, may be safely referred to *G. Drummondii*.

crosperma bartonioides, *Walp. Repert.* 5. p. 776, & *Ann. Bot. Syst.* 1. p. 794; *Hook. Bot. Mag.* t. 4491. On perpendicular rocks, near New Braunfels. April, in flower. (Also on rocky cliffs near Ojito, April, *Dr. Gregg.*) "Plant succulent, full of aqueous juice." — Hooker's prior name of *Microsperma* must give way to *Eucnide*, Zucc., as there is a much older genus *Microspermum* of Lagasca, also Mexican. *Eucnide lobata* (*Microsperma lobata*, *Hook. Ic. Pl.* t. 234, probably also *M. rudis*, *Schauer in Linnæa*, 20. p. 721, as the stamens are not always as short as in Hooker's figure), was likewise gathered near Monterey, Saltillo, &c. by Dr. Gregg, and at Zimapan, by Coulter.

PASSIFLORACEÆ.

PASSIFLORA TENUILOBA (*Engelm. Mss.*): "petiolis brevibus eglandulosis; foliis supra pilis brevibus subscabris subtus glabriusculis trinerviis reticulatis basi biglandulosis subcordatis trilobis, lobis lateralibus lanceolato-linearibus elongatis cuspidatis horizontaliter divergentibus vel recurvatis, medio brevissimo in fol. inferioribus integro in superioribus breviter trilobo; stipulis setaceis; pedunculis binis petiolum bis superantibus; cirrho elongato simplici; floribus exinvolucratis apetalis; calyce 5-lobo virescente. — On the Liano; coll. in October. — Apparently near *P. normalis*, *L.*, of Jamaica, which is unknown to me. Herbaceous, sub-erect, slender. Petioles 2, the peduncles 3–3½, lines long. Leaves rather rigid, with revolute margins, 5 or 6 lines long, but from 3 to 5 inches in transverse diameter; the lobes about 3 lines wide, the lateral ones sometimes bearing a posterior tooth or lobule. Flowers 8 or 9 lines in diameter. Only a single specimen was gathered by Lindheimer." *Engelm. in litt.* — I have this plant from Mr. Wright, gathered two years since, between San Antonio and the Rio Grande. Fine fruiting specimens also have just reached me in the collection made by this enterprising botanist last summer between San Antonio and El Paso, New Mexico. The fruit is about the size of a musket ball. Seeds ovate, acute at both ends, tuberculate.

397. *SICYOS ANGULATUS*, *Linn.* Bottom woods of Comale Creek, climbing trees. May.

398. *CYCLANTHERA DISSECTA*, *Arn. in Hook. Jour. Bot.* 3. p. 280. *Discanthera dissecta*, *Torr. & Gray, Fl.* 1. p. 696. *Echinocystis pedata*, *Scheele in Linnæa*, 21. p. 586. Margin of woods and hedges. June, in flower. — The genus *Discanthera* is correctly referred by Prof. Arnott to *Cyclanthera* of Schrader.

399. *CUCURBITA PERENNIS*: radice carnosio maxima; foliis strigoso-canescens cordato-ovatis vel triangulatis sursum angustatis indivisis vel subsinuato-repandis margine denticulatis; calycis lobis subulatis tubo æqualibus; fructu globoso. — *Cucumis?* *perennis*, *James in Long's Exped.* 2. p. 20; *Torr. in Ann. Lyc. New York*, 2. p. 242; *Torr. & Gray, Fl.* 1. p. 543. Plains and prairies, in dry, clayey or sandy soil, near San Antonio and New Braunfels. May. — "Trailing on the ground. Root from six inches to three feet thick, fusiform, yellow inside." Fruit yellow, globose, two or three inches in diameter." — This plant has been in cultivation in the Cambridge Botanic Garden for the last two or three years, from Texan seeds. It flowers freely, and has produced full-grown fruit, which, however, has not ripened. Our plants are *diœcious*, but it is *monœcious*, according to Dr. James. It may be the *Cucurbita foetidissima*, *H. B. K.*, as Dr. Torrey long since suggested, but that plant is said to be an annual, like the rest of the genus; besides, ours is not fetid. In its calyx, gamopetalous campanulate corolla, exappendiculate anthers, and even in the tumid margin of the seeds (although said by Dr. James to be acute) it accords with *Cucurbita*. Mr. Fendler met with the plant at Santa Fe; Dr. Gregg, between Saltillo and Parras, and, according to Dr. Engelmann, "Dr. Wislizenus found the same plant in the mountains of Chihuahua, with pyriform fruit."

400. *C. TEXANA*: (an *C. ovifera*, var.?) *Tristemon Texanum*, *Scheele in Linnæa*, 21. p. 586, & 22. p. 352. Margin of thickets, in moist woods, on the banks of the Upper

Guadaloupe, "apparently indigenous." September. This has also been cultivated in the Cambridge Botanic Garden. The column sometimes contains as many as four stamens. The pyriform fruit is just that of *C. ovifera*, of which our plant may possibly be only a naturalized variety.

401. *LAGENARIA VULGARIS*, *Seringe*. Bottom woods, Comale Creek. September. Probably early naturalized. The fruit is said to be globose.

(612.) *SICYDIUM* (an *Melothriæ* sect.?) *LINDHEIMERI* (*sp. nov.*): radice crassa perenni; foliis subreniformibus carnosius 3–5-lobatis partitisve et sinuato-dentatis tuberculis vel pustulis subtus prominulis scabratis ceterum cauleque glabris; pedunculo in pl. mascula atque fœminea folio brevior, masculo 3–9-floro, fœmineo unifloro; calyce fl. masc. infundibuliformi, fœm. supra ovarium longe producto anguste tubuloso, lobis petalis oblongis duplo brevioribus; bacca globosa rubra (diametro pollicari); seminibus abortu paucis turgidis rotundatis subcompressis submarginatis hilo bidentatis. — Thickets, from New Braunfels to the Liano; procumbent or climbing. June. (Also gathered in Texas, by *Mr. Charles Wright*.) — Root large and fleshy. Stems slender. Leaves succulent, from one to three inches in diameter, either moderately or deeply lobed. Flowers from one third to half an inch in length, greenish; the calyx of the sterile tubular-funnel form. Stamens 3, subsessile in the throat of the calyx; two of them bilocular, the thecæ separated by a rather broad and slightly two-lobed connective; the third of only one theca (or, as taken by some authors, 5 and triadelphous); the loculi linear-oblong, straight. Fertile flowers with the calyx-tube constricted above the globular ovary and prolonged into a rather slender beak, then funnel-form like the sterile, but bearing rather longer subulate calyx-lobes. Sterile filaments 3, short, one of them simple, the two others two-cleft, subulate. Petals, as in the sterile flower, entire, obscurely ciliate, oblong, a little narrowed below, unconnected, separately inserted into the throat of the calyx. Style a

little longer than the calyx-tube, three-cleft at the apex; stigmas fleshy, dilated, granulose-fimbriolate. Ovary three-celled, many ovuled. Berry, pulpy, "deep red when ripe, an inch or more in diameter," globose, ripening few seeds. Seeds 3 lines long, roundish-oval, turgidly lenticular. — *Sicydium* was founded by Schlechtendal on a small-flowered Mexican diœcious plant, of which the sterile flowers alone are known. Until the fruit of that plant is identified it must remain doubtful whether ours belongs to the same genus. This has larger blossoms, and a more elongated calyx. But it accords with Schlechtendal's incomplete description in being diœcious, in the 5-petalous corolla, and in the three distinct stamens with straight anther-cells. The leaves vary in the depth and breadth of their lobes. From the Rio Grande, Mr. Wright has communicated fragmentary specimens of what is probably a variety of the same species, with the leaves dissected into linear or filiform lobes and segments.

CACTACEÆ; by *Dr. Engelmann.*

* * Mr. Lindheimer has again sent many living specimens of Cactaceæ from New Braunfels, San Antonio, the Pierdenales, and the Liano. Among them I not only recognized all the species described in *Plant. Lindh.* (Boston Journal, Vol. V.) but found also a number of new forms. From other sources I have obtained other species from the lower Rio Grande. All these will be enumerated here in order to complete, as far as possible, the catalogue of the Texan Cactaceæ. A correspondence with Prince Salm Dyck, than whom none is better acquainted with these curious plants, and his examination of living specimens of most of the species, enables me to give this revision an authenticity not otherwise attainable.

MAMMILLARIA.

§ 1. *Fructu viridi, ovali; corolla persistente; testa seminum pergamentacea fusca; floribus ex axillis tuberculorum hornotinorum.*

M. CALCARATA (*M. sulcata*, *Engelm. Pl. Lindh. l. c.*, non *Pfeiffer*). Near *M. scolymoides*, Schdw. but sufficiently distinct, according to Prince Salm. — Rocky and hard, clayey

soil, on the Upper Guadalupe. My specimens from there are mostly densely cæspitose; tubercles in thirteen oblique rows; proliferous groove producing the buds always near its upper end. Flowers 2 inches long and 2 to 2½ inches in diameter: sepals (or rather outer firmer perigonial leaves) 20–35: petals (inner more delicate petaloid perigonial leaves) 30–35, yellow (dirty yellow only when fading), reddish at the base.

M. compacta, *Engelm. in Wislitz. Rep. not.* 32, from the mountains of Chihuahua is mentioned here only in order to add to the description of the plant that of the flower which I have had occasion to examine in the living state.—Floribus in vertice dense lanato centralibus; sepalis (17–19) lanceolatis acutis integris (rufescentibus, interioribus margine flavis); petalis (28) oblongo-lanceolatis mucronatis versus apicem denticulatis (sulphureis); stigmatibus 7–8 cuspidatis flavicantibus supra stamina (sulphurea) paulo exsertis.—Flowers at the end of June and beginning of July (in St. Louis). Flower-bud dark reddish brown: flower about 15 lines long and of the same diameter. Petals 6 lines long and 1¾ lines wide. Stigmata 2 lines long, cuspidate, as in *M. vivipara*, while all other species known to me have obtuse stigmata.

MAMMILLARIA RADIOSA (*sp. nov.*): simplex s. parce prolifera, ovata seu cylindrica; tuberculis teretibus supra plus minus sulcatis apice ex tomento albo aculeatis; aculeis rectis numerosis valde inæqualibus, plurimis (20–30) radiantibus tenuioribus albidis, centralibus 4–5 robustioribus fuscis s. rarius flavis, 3–4 sursum directis, singulo deflexo; axillis nudis, sulco subtomentoso; floribus (violaceis) ex axillis tuberculorum hornotinorum ortis sparsis (nec centralibus); sepalis petalisque lineari-lanceolatis acuminatis aristatis; sepalis (40–50) arachnoideo-fimbriatis, exterioribus brevioribus adpressis, interioribus longioribus recurvatis; petalis (30–40) integris s. basi subciliatis patentibus; staminibus (violaceis) numerosissimis æqualibus; stylo longe exserto; stigmatibus 7–9 (violaceis) erectis obtusis; bacca oblonga viridi floris

rudimento coronata ; seminibus fulvis ovatis scrobiculato-punctatis. — Sterile, sandy soil on the Pierdenales: flowers (in St. Louis) about the middle of June. The flowers open for three days, in direct sunshine only, and later than most other Cactaceæ, viz., from 12 or 1 till 3 or 4 o'clock. Stems 2–4 inches high, about 2 inches in diameter, dark green ; tubercles in 13 oblique rows ;¹ radiant spines 3–4 ; central spines from 4–6 lines long: flowers $1\frac{1}{2}$ – $2\frac{1}{4}$ inches long, and about the same diameter when fully open, of a lighter violet color or of a splendid dark purple: stigmas deep velvety purple. — Very near *M. vivipara*, Haw., which has been found from the Upper Missouri to Santa Fe: this, however, is distinguished by its low, mostly cæspitose growth, by the smaller number of radiant spines (14–18), the absence of the deflexed central spine, the smaller *central* flowers, the apiculate stigmata, and smaller seeds: it also flowers earlier (in St. Louis about the middle of May), but, like *M. radiosa*, opens the flowers only after 12 o'clock. In *M. vivipara* the youngest tubercles produce in their axils the flowers which appear central, and remain so till after fructification, whereupon new tubercles are developed in the centre, and the young fruit is pushed aside and becomes more and more lateral. In *M. radiosa* the flower buds are also formed in the axils of the first young tubercles of the season, but are immediately pushed aside by a continuous growth of more tubercles ; the buds as well as the flowers and fruits are therefore lateral. *M. vivipara* has not yet been found in Texas, though it may be expected in the mountainous regions bordering New Mexico.

§ 2. *Fructu coccineo ; corolla decidua.*

* *Fructu clavato elongato ; seminum testa pergamentacea,*

¹ It will hardly be necessary to mention that there are several different sets of rows of tubercles observable, but one set is usually more distinct than the others ; they depend on the size of the plant, and the number, size, and closeness of the tubercles. It is well known that in different specimens of the same species they turn to either side, right or left.

fusca; *caule simplici, succo lacteo; floribus ex axillis tuberculorum anni prioris*.¹

MAMMILLARIA APPLANATA (*n. sp.*): simplex, depressa; tuberculis elongato-pyramidatis subquadrangulatis apice ex tomento albo lanoso demum evanescente aculeiferis; aculeis rectis 15–20 tenuioribus inequalibus radiantibus, singulo centrali robustiori erecto; axillis nudis; floribus sordide albidis s. rubellis; ovario glabro, sepalis 8–13 lanceolatis; petalis 12–18 lanceolatis mucronatis, internis versus apicem fimbriato-denticulatis; stigmatibus 5–8 stamina breviter pauca flavida longe excedentibus flavis; baccis elongato-clavatis; seminibus subgloboso-ovatis scrobiculatis rugulosis parvis.—Rocky plains on the Pierdenales: flowers (in St. Louis) in May. Flowers forming a circle or wreath, in the larger specimens, of 1–1½ inches diameter around the growth of tubercles of the same year, while the scarlet fruit is frequently still persistent and forms an outer circle. Plant 2½ to 4½ inches in diameter, 1–2 inches high, with an almost level top and depressed vertex; in larger specimens 34, in smaller ones 13 or 21, spiral rows of tubercles are most conspicuous. Radiating spines 2½–6 lines long, whitish; the 3 or 4 outer or lower are stouter and very light brown; the central spines erect, or rather somewhat inclined upwards and inwards, 2–4 (mostly 3) lines long, light yellowish brown. The innermost tubercles of the preceding year appear to produce the inconspicuous flowers, which are from 9 to 12 lines long, urceolate when not fully expanded in bright sunshine. Berry 8 to 15 lines long.

MAMMILLARIA HEMISPHERICA (*n. sp.*): simplex, hemisphæ-

¹ It has been stated over and over again, that all the *Cactaceæ parallelæ* (with cotyledons parallel to the more or less compressed sides of the seed,) see *Wisl. Rep.* pp. 91 and 92) produce the flowers from the same year's growth, and the *Cactaceæ contrariæ* (cotyledons contrary to the compressed sides of the seeds) from that of the last preceding or former years. In *Wisl. Rep. l. c.* I have stated that some *Mammillariæ* probably formed an exception to that rule. What was a supposition then I have since ascertained to be the fact. These few species, however, are the only ones in which I have as yet observed this exception.

rica; tuberculis elongato-pyramidatis subquadrangulatis apice ex tomento albo brevi mox evanido aculeiferis; aculeis rectis, 9–10 tenuioribus inæqualibus radiantibus, singulo centrali robustiori porrecto; axillis nudis; floribus sordide albidis s. rubellis; ovario glabro; sepalis sub-13 lanceolatis acutis vel obtusiusculis; petalis sub-13 oblongo-lanceolatis mucronatis integris s. versus apicem denticulatis; stigmatibus 5–8 ex flavido rubellis supra stamina numerosa rubella exsertis; bacis elongato-clavatis; seminibus elongato-ovatis rugulosis minutis. — Below Matamoras, on the Rio Grande; brought home by the St. Louis Volunteers, in 1846: flowers (in St. Louis) in May. Very similar to the last species, but well distinguished by the hemispherical shape, the much smaller number of shorter spines, the less woolly areolæ, and the much smaller, less rough, and lighter-colored seed. I can see no essential difference in the flower. Body of the plant 3–4½ inches in diameter, 2–3 inches high: flowers 10–15 lines long and about the same diameter when fully open in the forenoon sun, urceolate in the afternoon. Radial spines 2, or 3–4; the central spine 2–3 lines long.

MAMMILLARIA GUMMIFERA, *Englm. in Wisl. Rep. not.* 33, has now flowered with me, and proved, as was expected, similar to the two foregoing species. I add here the description of the flower. — Floribus rubellis; ovario glabro; sepalis sub-13 oblongo-linearibus obtusiusculis fimbriatis; petalis 16 lanceolatis breviter acuminatis denticulato-erosis; stigmatibus 6 stamina brevia rubella longe excedentibus petala subæquantibus virescentibus. — Flower 15 lines long, 6–12 lines wide when fully open, brownish red outside; the petals reddish white, with dark red in the middle. Flower larger than that of *M. applanata*, much darker and more elegantly colored; style longer, etc. Fruit not seen.

** *Fructu subgloboso; seminum testa dura nigra; caule prolifero (an semper?) succo aqueo; floribus ex axillis tuberculorum hornotinorum.*

MAMMILLARIA NUTTALLII, *Englm. in Pl. Fendl.*, from the

Upper Missouri; the only specimen I possessed was unfortunately destroyed. — *Mammillaria similis*, *Engelm. in Plant. Lindh. l. c.*, first discovered by Mr. Lindheimer near the Brazos, has since been found by him south of the Guadalupe, about New Braunfels and on the Pieddenales in several forms. It has frequently flowered with me and annually produces abundant fruit. I substitute the following character and description.

M. SIMILIS: subsimplex s. plerumque cæspitosa; tuberculis ovato-cylindræis supra plus minus sulcatis (sulco in junioribus basin versus tomentoso sæpe prolifero) axilla tomentosis; areola albo-tomentosa demum nuda; aculeis 10–12 rectis albidis, radiantibus tenuioribus æqualibus, centrali nullo s. singulo robustiori; floribus ex axillis tuberculorum hornotiorum subcentralibus s. demum lateralibus (flavis s. ex rubello flavicantibus); sepalis petalisque lineari-lanceolatis acuminato-aristatis; sepalis 15–25 ciliato-fimbriatis sæpe plus minus recurvis; petalis 20–30 integris s. basi subciliatis; stigmatibus 5–8 virescentibus supra stamina numerosissima exsertis; bacca obovato-subglobosa coccinea; seminibus nigris subglobosis scrobiculatis majoribus.

α. CÆSPITOSA: gracilior; aculeis radiantibus sub-12, centrali subnullo; sepalis 15–20; stigmatibus sub-5.

β. ROBUSTIOR: subsimplex; aculeis radiantibus sub-10, centrali robustiori; sepalis 20–25; petalis 25–30; stigmatibus 7–8. Flowers (at St. Louis) in May. — Stems $1\frac{1}{2}$ – $2\frac{1}{2}$ inches high, obovate, of smaller diameter; tubercles in α. 8, in β. often in 13 rows; spines 3–4, in β. 4–8 lines long; central spine, when present, 6 lines long. Grooves proliferous towards the upper or the lower end. Flowers $1\frac{1}{2}$ –2 inches long, and of the same diameter when fully open, radiating like stars with their pale yellow, silky lustre, giving this species a most beautiful appearance when several open on the same morning: petals 12–15 lines long and 2 lines wide. Berries 3–5 lines in diameter.

ECHINOCACTUS.

The specimens described in the account of Lindheimer's plants, under the name of *E. setispinus* were the most northern and rather diminutive forms of this beautiful species; the flowers were incorrectly described from a withered bud adhering to one of the specimens. Numerous plants have since been sent by Lindheimer from San Antonio, and by the St. Louis Volunteers from the lower Rio Grande.

ECHINOCACTUS SETISPINUS (Englm. l. c.): ovato-subglobosus s. oblongo-cylindraceus; costis 13 acutis sæpe undulatis s. subinterruptis plus minus obliquis; areolis remotis, junioribus flavido- s. albido-tomentosis; aculeis radiantibus setiformibus 10–16, summis longioribus imisque flavicanti-fuscis, lateralibus albidis, centrali subsingulo robustiori fusco flexuoso s. apice uncinato; floribus solitariis nudis infundibuliformibus, tubo glaberrimo; sepalis inferioribus brevioribus obtusis s. cuspidatis 25–40, superioribus elongatis lanceolatis 15–25, omnibus margine membranaceis basi auriculato-cordatis tenuiter ciliatis; petalis 20–30 (cum basi miniata flavis) oblanceolatis acutis integris s. denticulatis; stylo supra stamina rubella longe exserto; stigmatibus 5–8 sulphureis recurvis s. erectis; bacca pulposa globosa rubra rudimentis sepalorum infimorum membranaceis stipata.

α . HAMATUS: major, subovatus; aculeis radialibus 10–12, centrali robustiori hamato. *E. hamatus*, Muhlenpf. *E. Muhlenplfordtis*, Fen.

β . SETACEUS: minor, subglobosus; aculeis radialibus 14–16, centralibus 1–3 setiformibus flexuosis. *E. setispinus*, Engelm. l. c. — Texas, from the Colorado to the Rio Grande. Flowers from April or May to October, and therefore, on account of its beautiful flower, one of the most valuable species for cultivation. — Plant 2–4 inches in diameter, and $1\frac{1}{2}$ –6 or 8 inches high, flowering when quite small, simple or (in cultivation at least) sometimes proliferous at base. Var. α is the larger southern form, with fewer, stouter, and longer spines (radial 6–16 lines, central 12–16 lines long). Var. β is the

smaller, more northern form, with more and thinner spines (radial 5–10, central 12–16 lines long). Flower from 20 to 35 lines long, and 24–30 in diameter when fully open; petals then often somewhat recurved: flowers open two days, only in bright forenoon sunshine. My specimens from the Rio Grande have 5 erect stigmata and a longer flower; all the others have 6–8 spreading or even recurved stigmata and a shorter flower-tube. Berry about 4 lines in diameter. Withered flower finally deciduous. Fruit often bursting, when the filamentous red pulp and the black, thimble-shaped, verrucose seeds are seen: this pulp is formed by the clavate, elongated, twisted funiculi, which most probably form the pulp of all the soft Cactus fruits, but they do not always remain as distinct as in this species.

ECHINOCACTUS TEXENSIS, *Hæpf.* (*E. Lindheimeri*, *Engelm. l. c.*) Mostly depressed, but sometimes globose. Common from the Colorado to the Rio Grande, and from thence to Saltillo (*Dr. Gregg*). Near New Braunfels it prefers the so-called Muskit-flats, or fertile level places with Muskit trees, overflowed in the rainy season. My specimens have several times fructified. Berry subglobose, pulpy, red, about 8 or 9 lines in diameter, covered with spiny bristles and soft wool, crowned by the woolly remains of the flower: seeds reniform, compressed, large, smooth and shining. Ribs in smaller specimens 13–14, in larger mostly 21, sometimes 24. Areolæ about 6 lines long, and 12 lines apart: spines from 6–10 lines long in some, 15–25 lines in others; sometimes the central spine is 2 or 3 lines broad. Flowers all open within a few days, in May (in St. Louis); unlike the last mentioned species.

CEREUS.

402. *CEREUS CÆSPITOSUS*, *Engelm. Pl. Lindh. l. c.* Common about New Braunfels; in flower in May.—This plant has been cultivated in Europe, as Prince Salm informs me, under the name of *Echinopsis Reichenbachiana*, Hortul., and has been confounded with *C. pectinatus*: compare *Wisliz.*

Rep. Appendix, note 45. This species has also been sent from Saltillo by Dr. Gregg. Mr. Lindheimer has sent from the granitic region of the Liano a beautiful variety with chestnut brown spines; β . *CASTANEUS*. — The characters given in *Pl. Lindh.* to this species have been corrected in *Wisliz. Rep. l. c.* I add here only that the fruit of this, as well as of all the other northern *Cerei* seen by me, ripens within a few weeks, contrary to what is observed in our *Mammillariæ* and *Opuntia*, and mostly bursts open longitudinally, when ripe. — I cannot omit an interesting morphological observation made on this species. The usual structure of the flower of all *Cerei* observed by me is the following. The ovary is covered with very short and (for the greater part) adnate sepals; the adnate part forms a protuberance (tubercle); the free part is mostly very small, often only a minute deciduous scale. In the axil of the scale we find the *areola*, covered with a short tomentum, long wool, and almost always with bristles or spines. All this together forms the *pulvillus* of authors. Next in order follow those sepals which form the tube of the flower. The lower of these are entirely similar to the sepals on the ovary. In the upper or interior sepals the tip, or free part, becomes larger and larger, more herbaceous, and finally more or less petaloid; the wool and bristles become scarcer, but the latter longer, and are produced from an areola which is almost always situated in the axil of the sepal, where its free part separates from the common tube. Now in *C. cæspitosus*, the free upper part of these sepals of the tube is more and more elongated, somewhat terete, not foliaceous, and bears the areola with its wool and bristles just below the subulate or (in the innermost sepals) somewhat foliaceous tip, reminding us almost of the tubercles of a *Mammillaria*. The descriptions given in *Pl. Lindh.* and in *Wisliz. Rep.* have to be corrected accordingly.

CEREUS PROCUMBENS (*n. sp.*): humilis; caule subtereti s. angulato articulato ramosissimo; tuberculis aculeiferis distinctis 4–5-fariis; areolis parvis orbiculatis, junioribus breviter

albo-tomentosis; aculeis brevibus tenuibus albidis apice fuscis, 5–6 radiantibus, centrali singulo erecto paulo longiore; floribus diurnis; ovario tuboque brevi pulvillis sub-40 albidovillosis setas spinescentes breviores fuscas 6–9 gerentibus stipato; sepalis interioribus sub-15 lineari-lanceolatis acuminatis; petalis 18–20 oblongo-linearibus acutis mucronatis subintegris (violaceis); stigmatе viridi infundibuliformi 10-partito stamina (pallide flavicantia) paulo superante. — On the lower Rio Grande, below Matamoras, collected by the St. Louis Volunteers, in 1846. — Plant spreading, 3–5 inches high: joints or branches $1\frac{1}{2}$ –2 inches long, $\frac{1}{2}$ inch in diameter, much contracted at the base: tubercles 4 or 5 lines distant from one another, often in 4 rows, whence the plant derives a distinctly quadrangular appearance, or in 5, when it is more cylindrical. Radial spines 6, or mostly only 5, the uppermost being frequently abortive, 1– $1\frac{1}{2}$ lines long; central spine $1\frac{1}{2}$ – $2\frac{1}{2}$ lines as long, stouter, directed upwards. Flower 3 inches long, and as wide when fully expanded, of a delicate purple color: petals 4 lines wide, often, in a bright noonday sunshine, recurved. Bristles on the tube about twice as long as the wool, below $1\frac{1}{2}$ –2, above $2\frac{1}{2}$ –3, lines long. — We have in gardens in St. Louis a similar species in cultivation, under the name of *C. Deppii*; but, as Prince Salm informs me, widely different from the true *C. Deppii*. It is not known whence it was obtained. It is distinguished from *C. procumbens* by the larger, thicker, more cylindric limbs: tubercles elevated, very distinct, in 5 or 6 rows; spines weaker and longer; 6–8 radial spines 5–6 lines long; ventral spine from 5 to 14 lines long: flower with a shorter tube, fewer pulvilli, with shorter wool, but longer and weaker bristles.

CEREUS RÆMERI (*n. sp.*): ovatus, e basi ramosus; costis sub-8 (7–9) tuberculatis interruptis; areolis orbiculatis, junioribus breviter tomentosis; aculeis albidis s. flavidulis demum cinereis teretibus, radialibus sub-8, centrali singulo robustiori porrecto; floribus diu noctuque apertis infundibuliformibus, limbo erectiusculo; sepalis ovarii et tubi 17

squamosis in axillis ex tomento albo brevissimo setas spinescentes albas 3–5 gerentibus; sepalis interioribus 8 ovato-oblongis carinatis obtusis mucronatis; petalis 10 obovato-spathulatis obtusis integris concavis chartaceis (coccineis); stylo longe supra stamina numerosissima exserto; stigmatibus 7 acutiusculis erecto-patulis viridibus. — Granitic region about the Liano: flowers (in St. Louis) in May. — Named after my friend Dr. F. Roemer, of the University of Bonn, who was the first to explore the geology of Western Texas, and brought the first specimens of this species. Sent also in numerous specimens by Lindheimer. Heads 3–4 inches high, $1\frac{1}{2}$ – $2\frac{1}{2}$ inches in diameter, single, or mostly 3–5 or even 10 from the same base; ribs interrupted: areolæ 4–8 lines distant from one another: radial spines 5–12 lines long; lateral spines longest: upper ones usually shortest; central spine 10–15 lines long. Flower open by day and night, for 4 or 5, and in cool cloudy weather as much as 6 or 7 days, 2 inches long, and one wide: petals 8–9 lines long, 5 lines wide, stiff: bristles on the tube 2–3 lines long. — The stiff and almost pergamentaceous petals are uninfluenced by sunshine or darkness like those of most other Cactaceæ. Several other northern species most probably agree in this particular, as especially *C. coccineus* and *C. triglochidiatus* of New Mexico; while other nearly related species have certainly diurnal flowers. — *C. coccineus* differs by the more numerous ribs, more numerous spines, larger and more crowded areolæ, etc. *C. polyacanthus*, Engelm. in Wislitz. Rep., has more numerous spines, and ten ribs, *C. enneacanthus*, Engelm. l. c., is larger with the tubercles less distinct, ten ribs; spines larger, angular.

CEREUS VARIABILIS, Pfeiff., with its beautiful white nocturnal flowers, delighted our volunteers in their camps on the lower Rio Grande. Young plants are procumbent, with terete or rather clavate branches: adult plants several (3–10) feet high, mostly triangular, with very long and stout, or sometimes quite short spines. Fruit large, luscious, with red pulp: seeds large, smooth, shining.

OPUNTIA.

§ 1. *Applanatæ*.

O. MACRORHIZA (*n. sp.*): prostrata; articulis obovato-orbiculatis planiusculis; pulvillis setis fuscis et sæpe aculeis singulis binisve instructis; aculeis teretibus validis porrectis s. paulo deflexis basi apiceque fuscis ceterum albidis cum adventitio inferiore graciliore reflexo sæpe deficiente; floribus sulphureis basi intus rubellis; ovario sepalis subulatis deciduis 13 in axillis setulas fuscas brevissimas gerentibus stipato; sepalis interioribus 15–18 subulatis et (internis) ovatis acuminato-cuspidatis; petalis 8 sepala superantibus late obovato-spathulatis obtusis cuspidatis eroso-denticulatis; stigmatibus 5 obtusis, adpressis, stamina numerosa æquantibus; bacca subpulposa clavata glabrata; seminibus marginatis. — Naked, sterile, rocky places on the Upper Guadeloupe. Flowers (in St. Louis) in June. Root a large and fleshy tuber, sometimes 2 or 3 inches in diameter; joints 3–4 inches long, about $2\frac{1}{2}$ – $3\frac{1}{2}$ wide, hardly attenuate at the base. Leaves subulate, about 5 lines long. Areolæ $\frac{3}{4}$ –1 inch distant, more crowded toward the base and on the edges: spines (often wanting) 1 inch long, the smaller 4–6 lines long. Flower 3 inches in diameter: ovary $1\frac{1}{4}$ inch long: petals 1 inch wide, $1\frac{1}{2}$ inch long, pale yellow, red at the base. Fruit $1\frac{1}{2}$ inches long; the strongly margined seeds comparatively few, $2\frac{1}{2}$ lines in diameter. — I have found the same plant in similar situations in Western Arkansas; and it is possible that it may be one of Nuttall's new species (*O. mesacantha*, *O. cæspitosa*, or *O. humifusa*) of which I cannot find a description. — Nearly related to *O. vulgaris*.

O. INTERMEDIA, Salm. The species mentioned in *Pl. Lindh. l. c.* No. 1. has since produced abundant flowers and fruit, and proves to be the above plant. It is near *O. vulgaris*, but more erect, or ascending; the joints much larger; flowers larger ($4\frac{1}{2}$ –5 inches in diameter); ovary more slender, 2– $2\frac{1}{4}$ inches long, with 20–25 subulate sepals; petals obcor-

date; stigma 5-lobed, erect; fruit $2\frac{1}{2}$ inches long, 6–8 lines wide at the top, deeply umbilicate. Lindheimer's specimens are from Industry, south of the Brazos. I believe I have seen the same species near Natchitoches on Red River.

O. LINDHEIMERI (*n. sp.*): erecta, robusta; caule lignoso; articulis (magnis) ellipticis basi attenuatis planis; pulvillis remotis ad margines confertioribus griseo-tomentosis, setis flavidis aculeisque paucis instructis 1–3 compressis validis deflexis varie divergentibus stramineis, nunc cum 1–2 aculeis adventitiis gracilioribus; flore . . . bacca clavata elongata subpulposa glabrata; seminibus late marginatis.—About New Braunfels. Plant erect, often 6–8 feet high: stems terete ligneous, sometimes 6 inches in diameter, with gray bark, and very light, spongy wood. Larger joints 9–12 inches long, 5–7 broad. Areolæ $1\frac{1}{2}$ –2 inches distant on old joints; bristles on them 1–3 lines long. Spines all pale yellow, much compressed, indistinctly annulated, $\frac{1}{2}$ –1 inch long, various; the 3 longer spines, or the one longer, with one or two shorter spines. The fruit, which Lindheimer has sent as belonging to this species, resembles very much that of *O. vulgaris*, 2– $2\frac{1}{2}$ inches long, slender, with a deep umbilicus, very different from that of the following species. Seeds 2– $2\frac{1}{4}$ lines in diameter, not numerous. Young plants grown from this seed have the same compressed spines, but are brown at the base; the lower areolæ produce no spines, but a quantity of long, coarse hair.—I add here the following species, though not properly belonging to the flora of Texas, because I suspect that it is also found at the mouth of the Rio Grande, within the limits of Texas. There, and especially on the barren sand islands at the Brazos, near Point Isabel, the St. Louis Volunteers found large and impenetrable thickets formed by an *Opuntia* with large joints, covered with almost globose fruits, with innumerable small seeds, and a very luscious deep red pulp. The fruit and seed are before me, but unfortunately I did not obtain a living specimen.

O. ENGELMANNI (*Salm. Mss.*): erecta; articulis orbiculato-

obovatis planiusculis; pulvillis remotis ad margines confertioribus griseo-tomentosis setis flavidis aculeisque paucis compressis ancipitibus instructis, 1–4 validis sæpe inæqualibus plus minus deflexis varie divergentibus basi rufis, ceterum stramineis cum adventitio infimo graciliore albedo sæpe deficiente; fl. . . . bacca ovata subglobosa late umbilicata pulvillis pluribus tomentosis stipata; seminibus minoribus anguste marginatis. — From El Paso to Chihuahua, indigenous and cultivated, *Dr. Wislizenus*. No doubt, also, on the Texan side of the Rio del Norte. — Erect, 5–6 feet high. Upper and larger older joints 12 inches long by 9 broad. Areolæ $1\frac{1}{2}$ –2 inches distant: bristles 2–6 lines long: spines 1– $1\frac{3}{4}$ inches long, very stout. Fruit $1\frac{1}{2}$ – $1\frac{3}{4}$ inches long, about $1\frac{1}{2}$ in diameter; umbilicus large, (10–12 lines) flat; pulvilli on the fruit about 5 lines distant. Seeds very numerous, about half as large in *O. vulgaris*, $1\frac{1}{2}$ – $1\frac{3}{4}$ lines in diameter, of an irregular shape. — Near *O. Dillenii* and *O. polyantha*, as Prince Salm informs me.

§ 2. *Cylindricæ*.

O. FRUTESCENS, *Engelm. in Pl. Lindh. l. c.* under *O. fragilis*, from which it widely differs, stands near *O. gracilis*, Salm. (raised from Mexican seeds), but is sufficiently distinct. (Salm.) Fruit by the abortion of the seeds very often sterile. — I had occasion to observe this species in blossom, and add the description of the flowers:

Floribus ex ramis anni prioris provenientes; ovario clavato basi 5-gono sepalis subulatis sub-13 stipato; sepalis interioribus 8 lanceolatis ex viridi sulphureis; petalis 8 obovato-lanceolatis cuspidatis (sulphureis s. subvirescentibus); staminibus numerosis (40–50) inæqualibus (externis majoribus); stylo exserto; stigmatibus 5 adpressis albidis. — The flower cannot be distinguished from that of the *Opuntia appplanata*, but it is only 8–10 lines in diameter: ovary 9–12 lines long. Flowers (in St. Louis) July and August.

O. ARBORESCENS, *Engelm. in Wisl. Rep.*, is recognized by Prince Salm as identical with his *O. stellata*; but as no de-

scription of his plant has ever been published, he adopts the above name. G. E.

CRASSULACEÆ.

(245.) *SEDUM SPARSIFLORUM*, Nutt. Rocky soil, on the Upper Guadalupe. May, June.

UMBELLIFERÆ.

† *HYDROCOTYLE INTERRUPTA*, Muhl.; Torr. & Gray, *Fl.* 1. p. 599. Swamps, along the Guadalupe. July.

† *H. UMBELLATA*, Linn.; Torr. & Gray, *l. c.* In pools and clear streamlets on the Liano. October.

(613.) *H. REPANDA*, Pers.; Torr. & Gray, *l. c.* Near Fredericksburg, in moist places along creeks, creeping among high grass. September.

(614.) *SANICULA CANADENSIS*, Linn.; Torr. *Fl. New York*, 1. p. 265. t. 32.

403. *ERYNGIUM LEAVENWORTHII*, Torr. & Gray, *Fl.* 1. p. 604. Margin of woods, on clayey prairies, Comale Creek and San Marco. August.—Plant annual, ornamental in cultivation, when the heads turn red or purple.¹

¹ Lamarck first properly distinguished from *Eryngium aquaticum*, Linn., the var. β ., and characterized it as a distinct species, under the name of *E. Virginianum*. Later, Michaux, giving to the original *E. aquaticum* of Linnæus the name of *E. yuccaefolium*, described under the name of *E. aquaticum*, a plant which appears to be, not the *E. Virginianum* of Lamarck (which is described as only a foot or so in height, with long and narrow, ensiform, radical leaves, finely striate and ciliate, with distant spinules, Lamarck moreover citing the figure of *Pluk. Alm. t.* 396), but the much larger and broader-leaved plant which Elliott has well characterized under that name. Elliott's *E. Plukenetii* is truly *E. Virginianum*, Lam. I am indebted to H. W. Ravenel, Esq., of St. Johns, Berkley, S. Carolina, for full specimens and notes, accurately distinguishing these species, and another, which perhaps has also been confounded with *E. Virginianum*, but which may properly bear the name of this acute and zealous botanist, who has directed my attention to its characters. The latter should stand next *E. aquaticum*, L.

✓ 1. *E. RAVENELLI* (*sp. nov.*): caule simpliciter; foliis linearibus elongatis *complicato-equitantibus subteretibus* nervulosis obsolete denticulatis, involucralibus trifidis capitulo æqualibus; paleis receptaculi uninervatis æqualiter 3-spinosis calycis lobos mucronato-acuminatos superantibus.—In flat and damp Pine land; common at Black Oak, St. Johns, Berkley District, South Carolina. September, October.—Stem from 1½–3 feet high, slender. I possess no strictly radical leaves; those from near the base of the stem are from 12–18 inches long, conduplicate in the dried plant, and

(615.) *CICUTA MACULATA*, Linn. Banks of Comale Creek. July. Plant 4 to 7 feet high.

404. *DAUCOSMA*, Engelm. & Gray.

Calycis dentes 5 subulati, persistentes. Petala obovata, emarginata, cum lacinula apice emarginato-biloba inflexa. Stylopodium conicum, persistens; stylis elongatis reflexis. Fructus ovoideus, ala angustissima crassa cinctus: mericarpia jugis 5 crassis obtusis (in fruct. juniore subduplicibus aut dorso exaratis). Valliculæ univittatæ: commissura plana bivittata; vittis latis rectis. Semen semiteres. Carpophorum bipartitum.—Herba annua, glabra, odore forte Dauci (unde nomen); caulibus 2–3-pedalibus ramosis striatis farctis; foliis ternati–quinatisectis, segmentis tripartitis, lobis laciniatis venosis lanceolatis, seu fol. supremorum lineari-setaceis; involucri et involucelli phyllis plurimis 3–5-partitis setaceis

3 or 4 lines wide at the base, thence tapering gradually to the apex. Ravenel describes them from the living plant as “terete, solid, but soft and spongy, with a deep groove in the upper surface, and a few obsolete spinulose serratures.” He remarks, that “the tube of the calyx is not entirely clothed with lanceolate vesicles,” as in *E. Virginianum*, etc.; but I find that this character is not uniform. The paleæ of the receptacle are larger; their three spiny cusps stronger and of equal length, and the calyx-lobes much less pointed than in *E. Virginianum*, but more so than in *E. aquaticum*.

2. *E. VIRGINIANUM* (Lam. Dict 4. p. 759): caule simplice vel apice cymoso; foliis lineari-lanceolatis planis, inferioribus venulosis subspinuloso-serratis dentibus uncinatis, radicalibusve fere integerrimis, superioribus spinulosis seu laciniatis, involucralibus trifidis vel 3–5-cuspidatis capitulo fructifero subæqualibus; paleis receptaculi trinervatis, tricuspidatis, cuspidate medio longiore lobos calycis fructiferi acuminato-aristatos subæquantibus. — *E. lacustre Virginianum*, &c., Pluk. Alm. t. 396, f. 3. *E. aquaticum* β. Linn. *E. Plukenetii*, Ell. Sk. 1. p. 582. Wet places, margin of ponds and streams, New Jersey to Florida and Texas. Flowers in August and September in the Northern States; in July and June farther south. Plant one or two feet high.

3. *E. PRÆALTUM*: caule 4–6-pedali superne ramoso; foliis lanceolatis planis venosis serratis utrinque attenuatis, radicalibus magnis longe petiolatis costa valida, summis linearibus spinuloso-dentatis incisive, involucralibus capitulo 2–3-plo longioribus; paleis receptaculi trinervatis breviter tricuspidatis lobos calycis fructiferi subulato-acuminatos vix æquantibus. — *E. aquaticum*, Michx. Fl. 1. p. 163, non Linn. *E. Virginianum*, Ell. Sk. 1. p. 343, non Lam. — In tide swamps, S. Carolina and Georgia; August. Michaux states he found it especially on Goose Creek, a tributary of Cooper River, in the tide swamps of which it was gathered by Mr. Ravenel. The lowest leaves are from one to two feet in length, and from 2½–3 inches in breadth, not unlike those of a *Rumex* in appearance, on petioles a foot or 18 inches in length. The paleæ are nearly as in *E. Virginianum*.

radios umbellæ et umbellularum plurimos subæquantibus; floribus albis. — Genus differt a proximo Cynosiadio petalis inflexis, ab *Æthusa* calyce 5-dentato, ab *Cœnanthi* carpophoro distincto, etc.

404. *DAUCOSMA LACINIATUM*, *Engelm. & Gray*. High valleys near New Braunfels and on the Upper Guadalupe, covering large patches of moist prairie land, and along the margin of thickets. Flowering in July. — The specimens have only half grown fruit. The carpological characters of the genus are derived from fruiting specimens of Lindheimer's collection in 1849, just received, and from others gathered by Mr. Wright the same year, on sand bars of the upper part of the Nueces. — The whole plant exhales a strong odor of Carrot.

(616.) *CHÆROPHYLLUM TEINTURIERI*, *Hook. & Arn.*: β . fructu pubescente, *Torr. & Gray*, *Fl.* 1. p. 638. Shady woods, New Braunfels. April, May. "Less rigid and erect than the form with glabrous fruit, from the same locality."¹

¹ From Mr. Wright, gathered in Western Texas, we have specimens of an evident congener of *Tauschia nudicaulis*, except that its fruit shows about 20 small vittæ, instead of six rather large ones. In this and many other respects, it accords with *Musenium*, *Nutt.*, of which I have no specimens (since No. 220 of Geyer's Oregon Collection does not agree with the generic character).

TAUSCHIA (*MUSENIOPSIS*) *TEXANA* (*sp. nov.*): glaberrima; foliis omnibus radicalibus utrinque viridibus pinnato-decompositis, nempe pinnis 3-5 cum impari, inferioribus petiolulatis (petiolulis ac petiolo gracili apteris) pinnato-3-5-partitis, segmentis cuneiformibus 3-5-fidis, lobis oblongis obtusissimis; scapo simplicissimo nudo; involucri parvo 1-2-phylllo aut nullo; involucello dimidiato e phyllo unico palmati 3-5-fido; radiis umbellulæ fructu didymo brevioribus; mericarpiis lævigatis 18-20-vittatis, jugis obsoletis. — Western Texas, near Austin? *Mr. Charles Wright*. — Root thick, perennial. Scape in fruit from 5 to 8 inches high, longer than the leaves. Umbel 5-7-rayed. Fruits a line and a half long, very smooth; the filiform jugæ nearly obsolete at maturity. — No. 120 of Coulter's Mexican Collection is *Tauschia nudicaulis*, as appears from an original specimen from Schlechtendal, in flower only. No. 121 is apparently a distinct species, viz.:

TAUSCHIA COULTERI (*Gray & Harv. ined.*): breviter caulescens; foliis ternatis-quinatisectis subtus glaucescentibus; segmentis ovalibus basi subcordatis cuneatisve sæpius trilobatis duplicato-dentatis, dentibus mucronatis; involucri et involucello e phyllo unico lineari integerrimo aut nullo; radiis umbellulæ fructu plus duplo longioribus. — Scapes in flower and fruit from 5 to 12 inches long, soon exceeding the leaves. Petioles much dilated and sheathing at the base, as in *T. nudicaulis*. The larger leaflets an inch and a half long. Pedicels in fruit 4 or 5 lines in length. Fruit fully two lines long; the jugæ rather prominent; vittæ 6 in each mericarp, rather large.

405. *ATREMA AMERICANA*, DC. *Prodr.* 4. p. 250. Margin of woods, in rocky, dry prairies, New Braunfels. May.

LORANTHACÆ.

406. *PHORADENDRON FLAVESCENS*, Nutt.; *Engelm. in Pl. Fendl.* p. 59, in not.: var. β . *PUBESCENS*, *Engelm. Mss.* On Muskit trees, Upper Guadalupe, Elms, &c.¹

¹ Dr. Engelmann communicates the subjoined revised character and remarks.

"*PHORADENDRON FLAVESCENS* (Nutt.): ramis teretibus; foliis oblanceolatis obovatis nunc orbiculatis obtusis in petiolum brevem attenuatis trinerviis; spicis masculis subverticillatis folium æquantibus, articulis 4-5, 15-35-floris; fœmineis suboppositis folio brevioribus, articulis 3-4 4-10-floris; floribus depresso-globosis annulato-carinatis ciliatis subtrifidis. — Var. α . *GLABRIUSCULUM*: foliis oblanceolatis seu obovatis 3-nerviis in petiolum sensim attenuatis glabris; ramis junioribus puberulis: — β . *PUBESCENS*: foliis ut in α , sed puberulis; ramulis canescentibus: — γ . *ORBICULATUM* (Ph. orbiculatum, *Engelm. Pl. Fendl.*): foliis obovato-orbiculatis in petiolum brevem abrupte contractis vix trinerviis subpubescentibus. — New Jersey to Southern Missouri and New Mexico, and south to Texas. Var. α . is the more northern form, mostly in low woods along water courses; β . in damp places on *Ulmus*, *Algarobia*, and also *Quercus falcata*, near New Braunfels, San Antonio, etc. γ . in Texas and Arkansas on dry sterile land, on *Quercus nigra* and other Oaks. Flowers, December to March; fruit ripens the following winter.

"The nearly related *Phoradendron tomentosum*, from South of the Rio Grande, has smaller leaves, longer spikes, etc. *Phoradendron villosum* of Oregon has much smaller and spatulate tomentose leaves, etc.

"I take this opportunity to make some corrections and additions to my paper on *Viscum* and the related genera, printed as a note in *Plantæ Fendlerianæ*, pp. 58, 59.

"I. *VISCUM*. Bacca globosa; pulposa, semipellucida, monosperma, corolla persistente coronata.

"II. *PHORADENDRON*, Nutt. Flores diœci, globosi. *Fl. masc.* Perianthium 3-(raro 2-s. 4-) lobum: antheræ loborum basi adnatæ, transversæ, biloculares, poris s. rimis verticalibus duabus dehiscentes. *Fl. fœm.* Perianthium 3-(rare 2-s. 4-) lobum: ovarium inferum, tubo adnatum, uniloculare; ovulo unico pendulo. Stigma sessile, plus minus bilobum. Bacca globosa, pulposa, semipellucida, monosperma, perigonio persistente coronata. — Frutices Americani, etc.

"* *Foliosa*; foliis lamina dilatata basi attenuatis; spicis fœmineis plus minus elongatis ex articulis pluribus plurifloris constitutis.

"1. *PHORADENDRON FLAVESCENS*, Pursh, sub *Visco*. Vide supra.

"2. *PH. TOMENTOSUM*, DC., sub *Visco*.

"3. *PH. VILLOSUM*, Nutt., sub *Visco*: tomentosum; ramis teretibus; foliis oblanceolatis s. spatulatis obtusis in petiolum brevem attenuatis obscure trinerviis s. subnerviis; spicis fœmineis oppositis s. verticillatis abbreviatis 2-3-articulatis; bracteis truncatis; articulis brevibus, inferiore 6-8-floro, superiore 2-floro; floribus depresso-globosis annulato-carinatis puberulis 3-fidis. — Wahlamet Woods, Oregon, Nuttall. — Leaves 8-12 lines long, 3-4 lines wide. Spikes 3-4 lines long. Flowers 0.5-0.6 of a line in diameter, like those of the two foregoing species de-

CAPRIFOLIACEÆ.

† *LONICERA ALBIFLORA*, Torr. & Gray, *Fl.* 2. p. 6.
 Var. β . tubo corollæ limbo paulo longiore aut æquali. L.
 anelica, *Lindh. ined.*—High rocky prairies between the

pressed, with an almost annular, ciliate carina. Stigma conspicuously bifid.—
 The narrow, long, attenuate leaves and the short spikes distinguish it from *Ph.*
tomentosum.

"5. *PH. LANCEOLATUM*, Engelm. in *Plant. Fendl.*

"* * *Squamosa*; foliis in squamulas connatas pelviformes reductis; spicis
 fœmineis ex articulis paucis 1–2 floris constitutis.

"6. *PH. CALIFORNICUM* (Nutt.): glabrum; ramis elongatis strictis gracilibus
 teretibus; squamis ovato-lanceolatis patentibus basi connatis tenuiter ciliatis;
 spicis fœmineis lateralibus oppositis 3–4-floris; floribus globosis trifidis glabris in
 quovis articulo singulis s. binis cupulæ ciliatæ immersis; spicis fructiferis elonga-
 tis; baccis globosis.—Sierra Nevada of California, on some species of *Strombocarpus*,
Dr. Gambel. Intermediate and connecting the leafy and scaly species of this
 genus, though properly belonging to the latter. Scales longer than the diameter
 of the branch, patulous. Branches a foot or more long (Nuttall); ultimate joints
 7–9 lines long; flowering spikes about 3 lines, and fruiting spikes 9 lines long.
 Fruit 3 lines in diameter. Flowering spikes with 2 lateral linear-lanceolate ciliate
 bracts at base, consisting of 3 joints, the lower being always sterile, the two upper
 ones producing each two or by abortion single flowers. In the fruit-bearing spike
 these joints are in such a manner elongated that the (typically axillary) fruit is car-
 ried up to the top of the joint, just below the next pair of leaves (or scales). Stigma
 globose, very slightly bilobed.

"7. *PHORADENDRON JUNIPERINUM*, Engelm. in *Plant. Fendl.*

"III. *ARCEUTHOBIUM*, *M. Bieb.* Flores diœci, ovati, compressi. *Fl.*
masc. Perianthium 3- (raro 4-) partitum. Antheræ lobis mediis adnatæ, unicellu-
 losæ, rima transversa dehiscentes. *Fl. Fœm.* Perianthium breviter pedicellatum,
 2- (raro 3-) dentatum: ovarium inferum, tubo adnatum, uniloculare; ovulo unico
 pendulo. Stigma sessile, conicum. Bacca carnosa, opaca, ovata, compressa, peri-
 gonio persistente coronata.—Frutices gerontogei et Americani glaberrimi, aphylli,
 articulati; foliis squamæformibus in vaginulas pelviformes s. cupuliformes connatis;
 floribus axillaribus terminalibusque sæpe spicam simplicem s. compositam
 mentientibus; fl. masculis 1–3 sessilibus, fœmineis plerumque singulis brevissime
 incluso-pedicellatis; baccis perigonio aucto plerumque discolore coronatis sæpius
 exserte pedicellatis extus carnosus intus viscidis.

"1. *A. OXYCEDRI* (*M. Bieb.*): caule ramisque oppositis s. dichotomis com-
 presso-teretibus gracilibus strictis; ramulis ultimis compresso-sub-quadrangulatis;
 squamis triangularibus in vaginulas pelviformes connatis; floribus fœmineis in
 ultimis ramulorum articulis axillaribus terminalibusque in quavis axilla singulis s.
 binis; baccis exserto-pedicellatis, erectis.—Southern Europe, etc. The specimen
 before me is from Fiume.—Lowest joints of the ultimate branchlets sterile; the
 next joint producing two leaf buds; the 2 to 4 following joints bearing flowers, one
 of which is terminal. The usual state probably is, where only the two last joints
 bear flowers, the ultimate one a terminal, and the next below two lateral flowers;
 that is the state described by Decandolle; 'floribus fœmineis ad ramulorum apices
 tribus.' But in the specimen before me most branchlets bear from 5 to 9 flowers,

Guadaloupe and Pierdenales. Comanche Spring. April.
 "A rough, unsightly shrub, from 4 to 6 feet high; only the young shoots show any inclination to climb or twine. Flow-

on the three or four last joints, one or two in each axilla. Flowers minute, 0.3 of a line wide and 0.4 long, on very short, enclosed pedicels, which apparently are elongated immediately after flowering. Pedicel of the young fruit (ripe fruits not seen) half the length of the fruit.

"2. *A. AMERICANUM* (Nutt.): caule ramisque fasciculatis teretibus gracilibus patulis; squamis truncatis in vaginulas dilatatas cupuliformes connatis; floribus masculis axillaribus terminalibusque nec spicatis. — Oregon, on Pinus, Nuttall. — Considerably resembling the slender forms of var. α . of the next species, but smaller, slenderer, and at once distinguished by the terete branches, the fasciculated branchlets, and much dilated vaginulæ. Female plant and fruit unknown to me.

"3. *A. CAMPYLOPODUM* (n. sp.): ramis oppositis seu dichotomis compresso-quadrangulatis; squamis truncatis breviter cuspidatis in vaginulas subcylindricas cupuliformes connatis; floribus axillaribus terminalibusque plerumque in spicam simplicem s. compositam aggregatis, masculis singulis vel binis ternisve, fœmineis in quavis axilla singulis; baccis exserto-pedicellatis patulis s. recurvis. — Var. α . *MACRARTHON*: caule compresso vix angulato; ramis plerumque gracilioribus; articulis plus minus elongatis; floribus fœmineis sparsis et in ramulis brevibus paucis seu in spicas simplices aggregatis. — β . ? *BRACHYARTHON*: caule tereti robusto; ramis robustis articulis abbreviatis diametro vix longioribus; floribus fœmineis in spicas densas compositas aggregatis. — I have comprised under this name different forms, which, when better known, will probably have to be separated as distinct species. My specimens are so incomplete that I can not even satisfactorily determine whether the different forms which constitute the first of the two varieties will finally be retained under one species. — Var. α . has been found in Oregon (only on Pinus ponderosa), Geyer; in New Mexico (only on Pinus edulis,) Fendler, 282; and in California, Douglas. — The specimens from New Mexico (only male and female flowers seen) have short female spikes, bearing 2 to 5 flowers, or the flowers are scattered on the branchlets: the flowers are elliptical, 0.4 lines wide and 0.5 long, almost sessile. Geyer's Oregon plant (I have seen only a fruiting specimen) has more elongated many-flowered female spikes; the flowers apparently ovate; pedicel hardly one third the length of the (not quite ripe) fruit. The Californian plant (male and female flowers and fruit) is much stouter: male flowers twice as large as in the specimens from New Mexico, and not rarely 4-parted; female flowers in more elongated spikes, elliptico orbicular, small, 0.4 to 0.5 line in diameter; the recurved pedicel more than half the length of the fruit, which is 2 lines long and 1, 3 wide. — Var. ? β . has been collected in Mexico by Coulter. I can hardly doubt it to be a distinct species; but my means to distinguish it are at present too limited. The stout terete stem, the short joints which are hardly longer than wide, the crowded compound or panicle spikes which resemble those of the following species, and the larger ovate (not elliptical) flowers appear to indicate specific distinction. Fem. flowers 0.6 lines wide and 0.8 lines long: fruit 2 lines long and 1.2 lines in transverse diameter, the pedicel more than half as long as the fruit: male flowers not seen.

"4. *A. CRYPTOPODUM* (n. sp.): caule ramisque acute quadrangulatis robustis articulis brevioribus; squamis truncatis in vaginulas cupulatas connatis; floribus in spicas densas compositas congestis, fœmineis ovatis in quavis axilla singulis;

ers dirty white." — Mr. Wright has sent the same plant from near Austin. The leaves on the flowering branches are from an inch to an inch and a half long; those of young sterile shoots larger. Tube of the corolla 5 lines long. — I possess no specimen of the original *L. albiflora*; from which this apparently differs only as the *L. flava* β . *Torr. & Gray, l. c.* differs from the type of that species.¹

RUBIACEÆ.

(617.) *GALIUM VIRGATUM*, *Nutt. in Torr. & Gr. Fl. 2. p. 20*: var. *caulibus laxioribus*. — New Braunfels; "covering large patches of naked prairie, mixed with little grass. April. To this species plainly belongs the *Galium Texanum*, *Scheele in Linnæa*, 21. p. 597, gathered by Rœmer.

(618.) *G. TRIFLORUM*, *Michx.*: forma pusilla, junior, foliis subspathulatis. New Braunfels. April.

(619.) *G. UNCINULATUM*, *DC. Prodr. 4. p. 600?* *G. Californicum* γ . *Texanum*, *Torr. & Gray, Fl. 2. p. 20*. New Braunfels. April. Allied to this is *G. hypadenium*, *Schauer*.

(247.) *DIODIA TRICOCCA*, *Torr. & Gray, Fl. 2. p. 30*. Sterile soil in high places, near New Braunfels. June.

(620.) *HEDYOTIS (AMPHIOTIS) STENOPHYLLA*, *Torr. &*

baccis brevissime incluso-pedicellatis erectis. — Santa Fe, only on *Pinus brachyptera*, *A. Fendler*, No. 283. — Hooker's *A. Oxycedri* from the Hudson Bay country appears to belong here: the figure shows at least sessile, erect fruits; but the segments of the male flowers are broadly oval, while those of the New Mexican plant are lanceolate." G. ENGELMANN.

¹ From the collection made by Lindheimer in 1849, Dr. Engelmann communicates the following:

SYMPHORICARPUS SPICATUS (*Engelm. Mss.*): foliis obovatis obtusis brevissime petiolatis supra demum glabris subtus pubescentibus pallidis; floribus (15–30) in spicas axillares arcte glomeratas congestis; corollis intus barbatis; baccis rubris. — Shady bottom woods, New Braunfels. A small shrub, 2 or 3 feet high, with numerous slender branches. Leaves about three fourths of an inch long, half an inch wide; the lower leaves wider, almost orbicular. Spikes from 4 to 6, or in fruit 8 or 10, lines long. Flowers a little smaller than in *S. glomeratus*, to which our species bears a strong affinity. It is, however, distinguished by its smaller, obtuse leaves, the spiked flowers, the larger and apparently more juicy fruit, and the broader, more compressed seeds. Of the numerous flowers in each spike only a few mature fruit." *Engelm.*

Gray, Fl. 2. p. 41. Var. corollis minoribus. — Rocky soil on the plateau above New Braunfels. June.

(621.) *HEDYOTIS* (*HOUSTONIA*) *HUMIFUSA* (*n. sp.*): annua, dichotome ramosissima, depressa, glutinoso-puberula; foliis lineari-lanceolatis imis in petiolum attenuatis mucronatis crassiusculis; stipulis dilatatis scariosis setaceo-dentatis; floribus in dichotomiis solitariis binisve breviter pedunculatis; tubo corollæ infundibuliformis lobis oblongis supra puberulis sublongiore lacinias calycis 4-partiti subulato-setaceas paulo superantibus; capsula pendula didyma puberula basi tantum calyci accreta; seminibus in loculis paucis ovoideis. — Open gravelly banks of streamlets, near Fredericksburg. May. (Also in sandy prairies at Austin, *Mr. Charles Wright*.) — Stems 3 or 4 inches long, fastigiate, very leafy, in cultivation (in the Cambridge Botanic Garden) close pressed to the ground, and forming a dense patch, flowering through the summer. Lower leaves somewhat spatulate, an inch long; the others linear and smaller. Corolla pale purple or nearly white, 3 lines long; the lobes more or less downy inside. Stigma two-lobed. The flowers are diœcio-dimorphous, after the manner of the genus and its allies; one plant having the linear anthers deeply included, and a long style with the stigma exserted; the other with a short, included style, and with the stamens inserted in the throat of the corolla. Both forms are abundantly fertile. The seeds are not hollowed on the inner face. — This species is intermediate in characters between *Houstonia*, *Amphiotis*, and *Ereicotis*, and should perhaps stand in a separate section, along with *H. rubra*, although the latter is in some respects quite a different plant. I was mistaken in stating (in *Pl. Fendl.* p. 61), that *H. rubra* had been met with in Texas. No. 621 is the form with subexserted stamens, and short style.

(622.) The same species with subexserted style and included stamens. Sandy prairies on the Pierdenales. May.

407. *FEDIA* (*VALERIANELLA*) *STENOCARPA* (*Engelm. Mss.*): fructu glabro anguste oblongo, loculis sterilibus paral-

lelis semine multo minoribus: cæt. *F. radiatæ* sed fructu minore. — Thickets in light soil, near San Antonio, New Braunfels, &c. March. This, Dr. Engelmann, probably with good reason, considers as distinct from the *F. radiata* with glabrous fruit (the form that alone occurs around St. Louis.) “The fruit is not only much smaller and more slender than that of *F. radiata*, but the proportion of the empty cells is different; these being much smaller than the seed; while in the former they are about equal, and in *F. carinata* (which has a different habit) larger. Cauline leaves often deeply dentate at the base, or almost pinnatifid, but sometimes entire.” *Engelm.*¹

COMPOSITÆ.

408. *VERNONIA LINDHEIMERI*: perennis, bipedalis; foliis anguste linearibus confertis sessilibus uninerviis margine revolutis supra glabris punctatis subtus cauleque simplici sericeo-tomentosis; capitulis corymbosis breviter pedunculatis 30–40-floris; squamis involucri cano-tomentosi pappo rubiginoso brevioribus conformibus appressis oblongis obtusis exappendiculatis; acheniis glabris 10-costatis glandulosis; pappo exteriori multisquamellato. *Gray & Engelm. in Proceed. Amer. Acad.* 1. p. 46. — Rocky hill sides, and high rocky plains, near New Braunfels, &c. July, August. Also near Seguin, &c. *Mr. Wright*. A very well-marked and handsome species. In cultivation in the Cambridge Botanic Garden, it does not blossom until near the end of September.

¹ From the collection of 1849, Dr. Engelmann has communicated the characters of another species, viz.

FEDIA AMARELLA (*Lindh. Mss.*): “glaberrima, erecta, versus apicem dichotomo-cymosa; foliis inferioribus spatulatis basi longe attenuatis, superioribus oblongo-linearibus sessilibus vel basi subcordatis, omnibus integris obtusis; fructibus minimis subgloboso-ovatis obtuse auriculatis hispidis, loculis sterilibus fertili subgloboso multo angustioribus brevioribusque pene oblitteratis. — Comanche Spring; flowering in May. — Plant 8 to 12 inches high, in habit similar to *F. radiata* and *F. stenocarpa*; but the leaves are entire in all the specimens; and the fresh herb has a bitter taste, which the other species have not. The fruit is much smaller than in any other species known to me; the sterile cells many times smaller than the seed, their cavity almost obliterated.” *Engelm.*

The appropriate name of *V. rosmarinifolia*, given to this species by Mr. Lindheimer, is preoccupied by Lessing.

409. CLAVIGERA RIDDELLII, *Torr. & Gray, Fl. 2. p. 77.* Gravelly banks of the Upper Pierdenales, and of the Guadalupe. September, October. — Plants 3 or 4 feet high, suffrutescent.

410. KUHNIA EUPATORIOIDES, *Linn. β. CORYMBULOSA*: forma humilis. *K. suaveolens, Fresenius.* *K. Maximiliani, Sinning in Neuwied, Trav.* Dry, rocky prairies near New Braunfels. November. Also, Comanche Spring, "with beautiful red or yellow flowers." *Lindh.*

411. *K. EUPATORIOIDES, δ. GRACILLIMA*: foliis angustissime linearibus marginibus revolutis seu filiformibus. Dry, gravelly bed of the Pierdenales and Cibolo Rivers. October. — The same as No. 305 of *Pl. Fendlerianæ* (also found by Mr. Wright on the Rio Grande), but with still narrower leaves. It would seem to be distinct from *K. eupatorioides γ. Torr. & Gray*; yet I find no characters besides the more attenuated leaves. I notice that it is the *Kuhnia leptophylla, Scheele in Linnæa, 21. p. 598*, described from Lindheimer's specimens.

† LIATRIS PUNCTATA, *Hook. Fl. Bor. Am. 1. p. 206. t. 55. Torr. & Gray, Fl. 2. p. 69.* Var. *β.* Rocky prairies between the Rio Colorado and Guadalupe. July.

412. BRICKELLIA (BULBOSTYLIS) CYLINDRACEA: cinereo-pubescent et resinoso-atomifera, herbacea e radice lignea; foliis plerisque oppositis triplinerviis subtus reticulato-venosis oblongo-ovatis obtusiusculis grosse serratis brevissime petiolatis, ramealibus subsessilibus; capitulis pedunculatis in paniculam foliosam laxè corymbosam digestis; involucri 10-flori cylindrici squamis 4-seriatim imbricatis arachnoideo-ciliatis striatis mucronato-acuminatis, intimis linearibus pappum barbellato-serrulatum æquantibus, exterioribus multo brevioribus ovalibus appressis; achæniis puberulis. *Gray & Englm. in Proceed. Amer. Acad. l. c.* — In stony thickets on the Upper Guadalupe. September, October. Also near Fredericks-

burg; and in the same region, by *Mr. Wright*. — Stems numerous, from a woody perennial root, two to four feet high. Heads 7 lines long. — Differs from *Clavigera* only in the merely serrulate pappus. Can it be *C. dentata*, *DC.*?

413. *EUPATORIUM AGERATIFOLIUM*, *DC.*, β . *TEXENSE*. *Torr. & Gray, Fl. 2.* p. 90. — *E. Lindheimerianum*, *Scheele, in Linnæa*, 21. p. 599. Rocky, Cedar woods, New Braunfels. October. Also gathered by *Mr. Wright* in Western Texas. — A shrubby plant, with slender branches, from four to ten feet high. In the cultivated plant the copious and showy blossoms are pure white.

† *E. SEROTINUM*, *Michx.* Margin of woods, New Braunfels. August.

† *ASTER SERICEUS*, *Vent. Hort. Cels.* t. 33. Banks of the Upper Pierdenales. October.

(249.) *A. DRUMMONDII*, *Lindl.*; *DC. Prodr.* 5. p. 234; *Torr. & Gray, Fl. 2.* p. 121. Thickets, on rocky banks of the Upper Pierdenales. October.

† *A. MULTIFLORUS*, *Ait.*; *Torr. & Gray, Fl. 2.* p. 124. Dry prairies of the Upper Guadalupe and Pierdenales. October.

A. VIRGATUS, *Ell. Sk.* 2. p. 253; *Torr. & Gray, Fl. 2.* p. 116. Thickets on the Cibolo River. October.

† *A. CARNEUS*, *Nees.*; *Torr. & Gray, Fl. 2.* p. 133. Upper Pierdenales. October, 1845.

† *A. CARNEUS*. *Nees.* Var. *foliis angustioribus linearibus*. On the Pierdenales.

(624.) *A. CARNEUS* β . *SUBASPER*, *Torr. & Gray, l. c.* Thickets and along streamlets, on the Pierdenales and Liano. October.

† *A. SIMPLEX*, β . *Torr. & Gray, Fl. 2.* p. 132. Rocky soil, margin of thickets. October.

† *A. DIVARICATUS*, *Torr. & Gray, Fl. 2.* p. 163. On the Pierdenales and Liano; in moist, fertile soil. Stems 2–4 feet high, sometimes leafless. Rays light blue.

(623.) *A. SPINOSUS*, *Benth. Pl. Hartw.* p. 20; *Torr. &*

Gray, Fl. 2. p. 165. Banks of the Liano. October. Also on the Brazos. "Shrubby, 6 to 8 feet high; the perennial stems half an inch thick, branching above [the branches herbaceous]. Leaves few and small, [scale-like or subulate], spinescent or soft, or none." *Lindh.*

(626.) *ERIGERON CANADENSE* β . *GLABRATUM*. *E. strictum*, *DC.*! *Prodr.* 5. p. 289, sed panicula composita expansa. Prairies north of the Liano, among granite rocks. October. — De Candolle's *E. strictum* is certainly not to be distinguished as a species from *E. Canadense*.

(627.) *E. MODESTUM*, *Gray, Pl. Fendl. in Mem. Amer. Acad. n. ser.* 4. p. 68. *Distasis modesta*, *DC., Prodr.* 5. p. 279? Rocky soil, north of New Braunfels, and near the sources of the Pierdenales. June and October. — The squamellæ and the fragile setæ of the pappus are more numerous than in the character of *Distasis modesta*, *DC.* Our plant is an undoubted *Erigeron*. Had it more numerous rays it would fall into the section *Phalacrolooma*, before *E. tenue*. As it is, it belongs rather to *Pseuderigeron*.

414. *EGLITES RAMOSISSIMA*, *Gray, Pl. Fendl.* p. 71. *Aphanostephus ramosissimus*, *DC. Prodr.* 5. p. 310. *A. Riddellii*, *Torr. & Gray, Fl.* 2. p. 189. Dry, sandy, or stony prairies of the Guadalupe and Pierdenales. April to August. — In cultivation this plant flowers abundantly through the whole summer, and is quite ornamental. The heads droop before anthesis; and the white rays are usually tinged with pink or purple underneath.

415. *KEERLIA BELLIDIFOLIA* (*Gray & Engelm. in Proceed. Amer. Acad.* 1. p. 47): annua, diffusa, hirsutulo-pubescent; caulibus foliosis dichotomo-ramosis; ramis ramulisque monocephalis; foliis spathulatis obtusis mucronulatis integerrimis, summis sublinearibus, omnibus inferne attenuatis, radicalibus obovatis petiolatis; involucri campanulati squamis biserialibus oblongis membranaceis nitidis mucronato-acuminatis marginibus late scariosis; ligulis (cyaneis) 9–14 lineari-oblongis; fl. disci plusquam 20 plerisque fertilibus; acheniis clavato-

fusiformibus vix compressis 7–9-nerviis hirtellis coronula integra sæpius obsoleta superatis. — Margin of woods and thickets, in sterile soil, Comale Creek and near New Braunfels (also 628.) April to June. A summer state, very much branched and with smaller capituli, was gathered in Western Texas by *Mr. Wright*. The plant has much the aspect of *Bellis integrifolia*, though the heads are rather smaller, and it branches diffusely in the same way, the branches terminated by single capituli. — The type of the genus *Keerlia* must be *K. ramosa*, *DC.*, a Mexican plant collected by Keerl himself, and with which the present plant appears to be a true congener. *K. linearifolia*, *DC.* is thought to have yellow rays, which leaves its position doubtful. *K. skirrobasis*, *DC.*, and of Delessert's as well as of Hooker's figure, is doubtless *Leucopsidium Arkansanum*, *DC.*, the *Egletes Arkansana*, *Nutt.*, as I have already remarked in *Proceed. Amer. Acad. l. c.*, and in *Plantæ Fendlerianæ*, p. 71. The genus, as it thus stands, takes the place in this country of *Brachycome*, from which; as well as from *Bellis*, it is well distinguished by its flat receptacle. Mr. Lindheimer's recent collection enables us to add another Texan species, of a peculiar aspect, and remarkable for its fewer-flowered heads, its flattened ray-achenia, and entirely sterile disk,¹ viz.

¹ An amended character of the genus is subjoined: —

KEERLIA, *DC. Prodr.* 5. p. 309. excl. sp. 2. et forte 1.

Capitulum multiflorum radiatum; ligulis 6–25 uniserialibus fœmineis; fl. disci hermaphroditis vel abortu masculis 5-dentatis. Involucrum campanulatum aut turbinatum, pauci-pluriseriale; squamis oblongis mucronatis vel acuminatis margine late scariosis. Receptaculum planum nudum. Achenia subteretia vel compressa, disci omnia aut centralia sæpe inania. Pappus parvus coroniformis. — Herbæ Mexicanæ et Texanæ, humiles, ramosæ; foliis alternis sessilibus integris; capitulis parvulis solitariis vel paniculatis; ligulis albis vel cæruleis.

§ 1. Achenia subteretia, fusiformia vel obpyramidata, nervosa: styli fl. disci appendice brevi obtusa superati. — Caules dichotome ramosi, ramis apice nudis moncephalis, capitulis multifloris.

1. *K. RAMOSA*, *DC.* 2. *K. BELLIDIFOLIA*, *Gray & Engelm. supra.* ? *K. LINEARIFOLIA*, *DC.*

§ 2. Achenia radii plano-compressa calloso-marginata, disci omnia inania gra-

(629.) *K. EFFUSA* (*sp. nov.*): perennis? caule virgato ad apicem usque folioso hirsuto; foliis utrinque hispidis oblongis obtusis integerrimis e basi lata arcte sessilibus, infimis subspatulatis basi attenuatis, costa supra impressa subtus prominula; panicula decomposita patentissima, ramulis pedunculisque filiformibus; bracteis minimis subulatis; involucri turbinati squamis gradatim imbricatis oblongis marginibus scariosis obtusissimis cuspidato-mucronatis; ligulis albis 5–7 oblongis; fl. disci 7–10 sterilibus; acheniis radii plano-compressis ovalibus calloso-marginatis ad margines præsertim hirtellis faciebus fere enerviis apice acutatis pappo minimo setuloso-coroniformi superatis, disci omnibus abortivis gracilibus, pappo ut in radio. — Shady declivities, on the banks of the Upper Guadalupe, near Comanche Spring. August, September. Stem from 18 to 30 inches high, very leafy to the top; the leaves about an inch long, not unlike those of *Aster patens*, but not clasping. Heads very numerous: involucre scarcely more than two lines long.

416. *GYMNOSPERNUM CORYMBOSUM*, *DC. Prodr.* 5. p. 312; *Torr. & Gray, Fl.* 2. p. 192. Rocky and naked limestone terraces between the headwaters of the San Antonio and Guadalupe rivers. August–October. — The leaves are nearly lanceolate.

(80.) *GUTIERREZIA TEXANA*, *Torr. & Gray, l. c.* New Braunfels, in large masses on sterile soil. July, August.

417. *SOLIDAGO SPECIOSA* γ . *RIGIDIUSCULA*, *Torr. & Gray*: foliis angustioribus, capitulis majusculis. *S. Lindheimeriana*, *Scheele in Linnæa*, 21. p. 599. On limestone gravel in the dry bed of the Cibolo, between New Braunfels and San Antonio. October.¹

cilia: styli fl. disci steril. appendice gracili lanceolata hispida superati. — Caulis strictus, panicula polycephala composita, pedunculis pedicellisque filiformibus patentissimis, capitulis paucifloris.

3. *K. EFFUSA*: vide *supra*. — Like *Brachycome*, which it represents in America, *Keerlia* as thus constituted exhibits both terete and compressed achenia.

¹ *Solidago cylindrica*, *Scheele in Linnæa, l. c.*, from Virginia, appears to be *S. speciosa* β . *angustata*, *Torr. & Gray*.

† *S. NEMORALIS*, *Ait.*; *Torr. & Gray, Fl. 2. p. 220.* Prairies, Upper Pierdenales. October.

† *S. INCANA* β ? *Torr. & Gray, Fl. 2. p. 221.* On declivities, Upper Pierdenales. October.

† *S. DECENFLORA*, *DC. Prodr. 5. p. 332.* Prairies, Upper Pierdenales. October.—This, if rightly identified, must stand next to *S. Radula*, from which it differs in having considerably larger heads, narrower involucral scales, and cinereous entire triplinerved leaves.—It has been abundantly collected at Comanche Spring, in October, 1849.

(253.) *ISOPAPPUS DIVARICATUS*, *Torr. & Gray, Fl. 2. p. 239:* pedunculis brevioribus. On granite along the Liano. November.

† *APLOPAPPUS SPINULOSUS*, *DC.*; *Torr. & Gray, l. c.* Var. *segmentis foliorum rachique filiformi-setaceis.* Sandy soil under Muskit bushes, on the Liano.

(630.) *CENTAURIDIUM DRUMMONDII*, *Torr. & Gray, Fl. 2. p. 246.* Dry, rocky prairies on the Liano. November.—Raised from Texan seeds in the Cambridge Botanic Garden, this proves to be a very showy plant. Its numerous, golden yellow rays are fully an inch in length. The radical and lowest cauline leaves are strongly laciniate-pinnatifid or even bipinnatifid.

418. *GRINDELIA SQUARROSA*, *Dunal*; *DC. Prodr. 5. p. 314.* *G. Texana*, *Scheele, in Linnæa, 21. p. 60.* Stony prairies, New Braunfels. August. Plant 2 to 4 feet high, branching above; the heads nearly an inch in diameter, larger, indeed, than ordinary for *G. squarrosa*, to which, however, it clearly belongs.

(631.) *CHRYOPSIS HISPIDA*, *Hook. Fl. Bor.-Am. 2. p. 22*; *Torr. & Gray, Fl. 2. p. 255.* Var. *STENOPHYLLA*: foliis linearispathulatis. On the Liano growing, from strong ligneous roots, in the crevices of smooth granite rocks. November.

419. *C. CANESCENS*, *Torr. & Gray, Fl. 2. p. 256.* Rocky prairies, on the Comale and Upper Guadalupe. June—August.

(625.) *BACCHARIS TEXANA*, *Gray, Pl. Fendl.* p. 75. *Linosyris Texana*, *Torr. & Gray, Fl. 2.* p. 232. Dry, granitic prairies, and on granite rocks on the Liano; often exclusively covering large patches. November.

(634.) *B. ANGUSTIFOLIA*, *Michx.* *Fl. 2.* p. 125; *Torr. & Gray, Fl. 2.* p. 258. pl. masc. Banks of the Liano, in granitic gravel. October.—Shrub 6 to 10 feet high. The larger leaves are three inches long, two or three lines wide, and beset with a few salient teeth. *Mr. Wright* gathered the same plant on the Rio Grande, along with *B. cærulescens*. It seems to be the *B. angustifolia*; but it is remarkable that it should occur so far inland.

(635.) *B. ANGUSTIFOLIA*, *Michx.*: pl. fœm. fructifera. With the preceding.

(420.) *PLUCHEA CAMPHORATA*, *DC.*; *Torr. & Gray, Fl. 2.* p. 261. Var. *involucris floribusque rubescentibus*. Banks of Comale Creek, in clayey prairie soil. September. (Some few specimens of *P. fœtida* are distributed under this number.)

(421.) *FILAGINOPSIS MULTICAULIS*, *Torr. & Gray, Fl. 2.* p. 263. Dry prairies, New Braunfels, &c. April.¹

(632.) A variety of the last, from the same region, more branched and depressed, the chaff all woolly.

(633.) *DIAPERIA PROLIFERA*, *Nutt.*; *Torr. & Gray, Fl. 2.* p. 264. *Evax prolifera*, *Nutt. in DC. Prodr. 5.* p. 459. Dry prairies, New Braunfels. April.

(422.) *AMPHIACHYRIS DRACUNCULOIDES*, *DC. Prodr. 5.* p. 313; *Torr. & Gray, Fl. 2.* p. 192. *Gutierrezia Lindheimeriana*, *Scheele in Linnæa*, 22. p. 351. Rocky prairies of the

¹ It is hard to say upon what plants (from a Texan collection, made by Rœmer,) *Mr. Scheele* has founded two new species of *Filago*, viz. *Filago repens*, and *F. Texana*, *Scheele in Linnæa*, 22, p. 164. If they are rightly described as having "Flosculi centrales tubulosi perfecti pappo capillari instructi," they are not our species of *Filaginopsis*, nor *Diaperia*. We know of no indigenous North American *Filago* this side of California, nor of any naturalized species except *F. Germanica*. It may be seen, moreover, that no great reliance can be placed on this writer's determinations.

Guadaloupe, north of New Braunfels, in large patches. September.

(636.) *MELAMPODIUM CINEREUM*, *DC. Prodr.* 5. p. 518; *Gray, Pl. Fendl.* p. 78. *M. leucanthum*, *Torr. & Gray, Fl.* 2. p. 271. Rocky declivities, Upper Pinedales. May — October. — The plant is ornamental in cultivation, and bears a profusion of blossoms through the whole season.

(637.) *POLYMNIA UVEDALIA*, *Linn.*; *Torr. & Gray, Fl.* 2. p. 273. Bottom woods of the Guadaloupe. September. "Rays short, rarely seen." But plants raised from the seeds in the Botanic Garden, develop rays of nearly the usual size for this species.

423. *BERLANDIERA TEXANA*, *DC. Prodr.* 5. p. 517. Margin of woods, in dry, stony soil, New Braunfels. May.

424 (638). *LINDHEIMERA*, *Gray & Engelm.*

Capitulum multiflorum, monoicum; floribus radii 4–5 ligulatis, fœmineis, ad axillas squamarum involucri interiorum sitis; fl. disci circiter 20, tubulosi, sterilibus. Involucrum duplex; exterius e squamis 4–5 laxis linearibus foliaceis; interius totidem membranaceo-foliaceis oblongis planis disco longioribus. Receptaculum planum, paleis chartaceis ovaria sterilia amplexantibus onustum, binis exterioribus basi cujusque squam. inter. invol. adnatis, persistentibus. Ligulæ ovales, breviter tubulatæ, involucrum vix superantes: corolla disci 4–5-dentata. Styli fl. ster. filiformes, indivisi, hispidi. Achenia radii ovalia, obcompressa-plana, marginato-alata, intus subcarinata, carina apice in dentem parvum reflexum producta, alis in pappum 2-dentatum extensis; disci abortiva. — Herba monocarpica, erecta, scabro-hispida; caule dichotomo; pedunculis subcymoso-paniculatis gracilibus moncephalis; capitulis nutantibus; foliis imis alternis grosse dentatis, cæteris oppositis sessilibus oblongo-ovatis basi hinc inde dentatis, summis pedunculisque glandulis patelliformibus

conspersis. Flores aurei. — Genus eximium, Berlandieræ et Engelmanniæ cognatum, diximus in honorem ejus acerrimi inventoris, qui floram Texanam largiter indagavit.

424. *L. TEXANA*, Gray & Engelm. in *Proceed. Amer. Acad.* 1. p. 47. In thickets and rocky Cedar woods, New Braunfels; also Comanche Spring, &c. (638). Also gathered in Western Texas by Mr. Wright. This has been cultivated now for two seasons in the Cambridge Botanic Garden as an annual: it copiously produces its neat flowers through the summer, and until killed by autumnal frosts.

† *SILPHIUM LACINIATUM*, Linn. Prairies and open woods, New Braunfels. July.

425. *ENGELMANNIA PINNATIFIDA*, Torr. & Gray, *Fl.* 2. p. 283. E. Texana, Scheele in *Linnæa*, 22. p. 155. Upper Guadalupe, on rocky hillsides, and in dry and hard prairie soil. April.

(639.) *E. PINNATIFIDA*; var. foliis majoribus submembranaceis. Comanche Spring, and New Braunfels.

426. *PARTHENIUM HYSTEROPHORUS*, Linn.; Torr. & Gray, *Fl.* 2. p. 248. Muskit Flats, near San Antonio, and in the streets of that town. April to October.

427. *IVA ANGUSTIFOLIA*, Nutt. in *DC. Prodr.* 5. p. 529; Torr. & Gray, *Fl.* 2. p. 279. Comanche Spring, &c., in rocky, moist soil, and in the dry bed of streams, in large masses. "Used in brewing beer, in place of hops."

428. *AMBROSIA APTERA*, DC. *Prodr.* 5. p. 527. *A. trifida* β. Texana, Scheele in *Linnæa*, 22. p. 156. Low grounds, New Braunfels. August. Closely allied to *A. trifida*, but readily distinguished by the marginless petioles, terete stems, and the quite different fruit. The fruit is much smaller, generally 8-ribbed, and merely 4–6-tuberculate.

429. *A. CORONOPIFOLIA*, Torr. & Gray, *Fl.* 2. p. 291; var. *asperula*, capitulis minoribus, fructibus interdum 6-tuberculatis. *A. Lindheimeriana*, Scheele in *Linnæa*, 22. p. 156. Moist prairies, near New Braunfels. August.

430. *A. CORONOPIFOLIA*, var. *gracilis*, foliis minus divisis, capitulis minoribus. *A. glandulosa*, *Scheele*, l. c. p. 157. In the gravel of the dry bed of the Cibolo. September.

(640.) *FRANSERIA TENUIFOLIA*, *Gray & Harv. in Pl. Fendl.* p. 80; var. *TRIPINNATIFIDA*: segmentis foliorum crebris brevioribus. — Mountain prairies of the Liano, along the margin of thickets. November. — This pretty clearly belongs to the same species as the plant which Fendler collected at Santa Fe; but all the lower leaves are tripinnately parted, their segments shorter and broader; and only the upper bipinnately parted leaves have the terminal lobes prolonged. The fertile involucre, in the specimens examined, is only one-celled and one-flowered; and so it sometimes is in Fendler's specimen. It is, like that, minutely scabrous-pubescent, and the spines, which are more developed and more numerous than in Fendler's plant, but much shorter than in *F. Hookeriana*, all have uncinat points.

431. *HALEA TEXANA*, *Gray, Pl. Fendl.* p. 83. *Tetragonotheca Texana*, *Gray & Engelm. in Proceed. Amer. Acad.* 1. p. 48. *Tetragonosperma lyratifolium*, *Scheele in Linnæa*, 22. p. 167. Upper Guadalupe and Cibolo Rivers, on rocky ridges. April. Also gathered by *Mr. Wright*. — In cultivation here it blossoms through the summer. The minute pappus is apt to escape notice, except in the living plant.

(94.) *ECHINACEA ANGUSTIFOLIA*, *DC.* On the Pierdenales, Comanche Spring, &c. May. "Root very pungent. Flowers somewhat fragrant."

† *RUDBECKIA BICOLOR*, *Nutt.* Pierdenales. June. In cultivation, the brown-purple color is commonly obsolete or wanting on the ligules of all the later heads.

(641.) *DRACOPIS AMPLEXICAULIS*, *Cass. ; DC. Prodr.* 5. p. 558; var. *ligulis basi atropurpureis*. On the Pierdenales. June.

(642.) *LEPACHYS COLUMNARIS* β . *PULCHERRIMA*, *Torr. & Gray, Fl.* 2. p. 315. Rich, clayey prairies, New Braunfels. June.

432. *ALDAMA UNISERIALIS*. *Gymnopsis uniserialis*, *Hook. Ic. Pl.* t. 145; *Torr. & Gray, Fl.* 2. p. 317. Shady woods, On Comale Creek. June — August. In this and the allied species, united by De Candolle with *Gymnolomia*, *H. B. K.*, under the common name of *Gymnopsis*, “the remarkable manner in which the fertile achenia of the disk are inclosed in the paleæ of the receptacle, like those of the ray-flowers in *Melampodium*, seems fully to warrant the retaining for them Llave and Lexarsa’s generic name, *Aldama*.” *Benth. Voy. Sulph.* p. 116.

433. *SIMSIA* (*BARRATTIA*: achenia calva glabra) *CALVA*. *Barrattia calva*, *Gray & Engelm. in Proceed. Amer. Acad.* 1. p. 40. Rocky hills and terraces, often under shrubby live oak, along the Guadalupe and Pierdenales. July — October. — Root fleshy, perennial. Size and number of the rays very variable. — The discovery of an allied species with a slightly biaristulate or bidentate pappus, as described in *Plantæ Fendlerianæ*, p. 85., invalidates the character of the genus *Barrattia*, which we had established on this plant. Although the want of a pappus would refer it to a different Candollean division of *Heliantheæ*, it cannot now be generically distinguished from the genus *Simsia*.

† *VIGUIERA BREVIPES*, *DC. Prodr.* 5. p. 578. Rocky hill tops, on the Upper Guadalupe. October. — The same form was collected in Western Texas by *Mr. Wright*. It agrees with the character in the *Prodromus*.

434. *V. BREVIPES*, β . foliis plerisque rhomboideo-ovatis membranaceis. *V. Texana*, *Torr. & Gray, Fl.* 2. p. 318. *Helianthella latifolia*, *Scheele in Linnæa*, 22. p. 160. Margin of woods and on bushy slopes, New Braunfels. July — October.

(96.) *HELIANTHUS CUCUMERIFOLIUS*, *Torr. & Gray, Fl.* 2. p. 320. New Braunfels. — This is probably *H. Lindheimerianus*, *Scheele in Linnæa*, 22. p. 159. But it is not perennial.

(259.) *HELIANTHUS LENTICULARIS*, *Dougl.; Torr. & Gray, Fl.* 2. p. 319. Prairies on the Guadalupe. July.

(643.) *ACTINOMERIS* (*ACHÆTA*) *WRIGHTII*, *Gray, Pl. Fendl.* p. 85. Upper Guadalupe, at Pinta's Crossing, on rocky soil, in open woods. June. — Plant 1–3 feet high, with few branches and heads, rigid.

† *COREOPSIS DRUMMONDII*, *Torr. & Gray, Fl. 2.* p. 345. Bottom woods near Victoria. February.

† *C. TINCTORIA*, *Nutt.*; *Torr. & Gray, l. c.* Margin of woods and praries, Comale Creek; common. July. — The plant, No. 441, noticed under 397, in *Pl. Fendlerianæ* as *C. tinctoria*, is not that species, but *C. cardaminefolia*, *DC.*, which species we have also in cultivation, from Texas.

435. *BIDENS CHRYSANTHEMOIDES*, *Michx.*; *Torr. & Gray, Fl. 2.* p. 352. Banks of streams, New Braunfels. October.

436. *LIPOCHÆTA TEXANA*, *Torr. & Gray, Fl. 2.* p. 357. Naked hills and margin of woods, New Braunfels and Upper Guadalupe. June–September. — Ray-achenia three-angled, more or less three-winged; the conspicuous wings of the lateral angles confluent at the summit; the ventral wing narrow, dilated at the summit. Achenia of the disk narrowly two-winged at the apex. Awns fragile, thickened at the base and united with the confluent, firm, chaffy scales.

(644.) *HYMENATHERUM WRIGHTII*, *Gray, Pl. Fendl.* p. 89. Sandy soil, in Post-Oak woods, on the Pierdenales. June.

437. (646.) *AGASSIZIA*, *Gray & Engelm.*

Capitulum globosum, multiflorum, radiatum; ligulis fœminiis nunc difformibus. Involucrum disco brevius, circa biseriale; squamis exterioribus lineari-oblongis appendicula spathulata vel obtusa foliacea patente instructis, intimis lineari-acuminatis. Receptaculum globosum, alveolatum; alveolis valde dentatis fimbrilliferis. Ligulæ cuneatæ, palmato-3–4-fidæ, sæpe irregulares seu tubuloso-diffformes, vestigia staminum gerentes. Corolla disci Gaillardiæ, dentibus triangulari-lanceolatis. Styli rami ligularum lineares, subulato-apiculati; fl. disci ad basin appendicis brevissimæ nudæ clavato-obtusæ penicillati! Achenia turbinata, sericeo-villosissima. Pappus

radii et disci conformis, e paleis 9 hyalinis ovatis uninerviis constans, nervo in aristam capillarem corollam adæquantem longe producto. — Herba biennis, acaulis; radice fusiformi; foliis varie 1–2-pinnatifidis, nunc sinuatis lyratisve; scapo 1–2-pedali, toto nudo, monocephalo. Capitulum Gaillardiæ, speciosum. Flores suaveolentes, disci flavi et purpurei, radii rubescentes vel atrorubri.

437. *A. SUAVIS*, Gray & Engelm. in *Proceed. Amer. Acad.* 1. p. 50. *Gaillardia odorata*, Lindh. ined. *G. simplex*, Scheele in *Linnæa*, 22. p. 160. Rocky prairies, near San Antonio and New Braunfels. April and May (646). — The genus is very near *Gaillardia*, from which it is distinguished by the fertile but usually deformed rays, the globose and alveolate receptacle, and by the style, the branches of which are tipped with a penicillate tuft, but not prolonged into a filiform hispid appendage; and the habit is peculiar. The flowers are deliciously sweet-scented, the fragrance much like that of the Heliotrope; the short rays are cherry-red or dark purple, and yellow only at the tip, as in several species of *Gaillardia*; the earliest heads are rayless. The leaves vary from lyrate-pinnately parted, with linear segments, to obovate and barely-toothed or incised towards the base. — *Agassizia*, *Chavannes*, is *Galvesia*, *Dombey*. *Agassizia*, *Spach*, is *Sphærostigma*, *Seringe*, and *Holostigma*, *Spach*, by most authors received only as a subgenus of *Ænothera*.

(103.) *GAILLARDIA PICTA*, Don. Near Victoria. More upright, and the deeply incised rays more cuneate than in the plant from Galveston.¹

438. *HYMENOPAPPUS CORYMBOSUS*, Torr. & Gray, *Fl.* 2. p. 372. *H. Engelmännianus*, Kunth. in *Ann. Sci. Nat.* 3 Ser. 11. p. 229. (April, 1849) ex char. Prairies and margin of woods, in fertile, rather heavy soil, New Braunfels, &c. April, May. Biennial.

¹ I cannot make out what *Gaillardia tuberculata*, Scheele, *l. c.* p. 349, (described from Roemer's collection) can be; neither *G. Rœmeriana*, Scheele, *l. c.* p. 161, unless it be *Actinella scaposa*.

(645.) *HELENium AUTUMNALE*, *Linn.*: var. *foliis rigidis*. Grassy banks of Streamlets, Fredericksburg. October.

439. *ACTINELLA SCAPOSA*, *Nutt.*; *Torr. & Gray, Fl. 2. p. 382.* *Gaillardia Rœmeriana*, *Scheele in Linnæa*, 22. p. 161? Rocky prairies, Victoria and San Antonio. February – May.

(648.) *A. LINEARIFOLIA*, *Torr. & Gray, Fl. 2. p. 283.* On sterile, rocky soil, New Braunfels. May. Prairies on the Pierdenales, in patches, on sandy soil. June.

(647.) *MARSHALLIA CÆSPITOSA*, *Nutt. in DC. Prodr. 5. p. 680. (Pl. Lindh. supra, No. 110.)* Var. *caule folioso!* Rocky soil on the Upper Guadalupe. April.

(649.) *ACHILLEA MILLEFOLIUM*, *Linn.*: var. *floribus roseis*. Post Oak openings, on the Pierdenales. June.

440. *ARTEMISIA DRACUNCULOIDES*, *Pursh. Fl. 2. p. 521; Torr. & Gray, Fl. 2. p. 416.* In patches, near New Braunfels. October.

441. *A. DRACUNCULOIDES*, var. *foliis infimis trifidis vel incisis*. Dry prairies, Upper Guadalupe. September.

† *A. CAUDATA*, *Michx. Fl. 2. p. 129; Torr. & Gray, Fl. 2. p. 417.* Sandy prairies of the Upper Pierdenales. October.

442. *A. LUDOVICIANA*, *Nutt. Gen. 2. p. 143; Torr. & Gray, Fl. 2. p. 420.* *A. cuneifolia*, *Scheele in Linnæa*, 22. p. 162. Dry and high prairies, especially on old ant hills. September.

443. *A. VULGARIS* δ. *MEXICANA*, *Torr. & Gray, l. c.*; var. *foliis superioribus integerrimis angusto-lanceolatis linearibus supra glabris. (A. Lindheimeriana, Scheele in Linnæa, 22. p. 163.)* In patches in dry prairies near New Braunfels. September.—The specimens accord with Texan ones of Drummond, cited in the Flora of North America. It is one of the forms that connect *A. Ludoviciana* with *A. Vulgaris*.

444. *A. VULGARIS* δ. *MEXICANA*, *Torr. & Gray, l. c.* Nearly the same form as the last; the lower leaves all fallen; the upper entire. Dry bed of the Cibolo. September.

† *GNAPHALIUM POLYCEPHALUM*, *Michx.* New Braunfels, &c.

445. *SENECIO AUREUS* ε. *BALSAMITÆ*, *Torr. & Gray, Fl. 2. p. 442.* High, rocky plains, Upper Guadalupe. March.

† S. RIDDELLII, *Torr. & Gray. Fl.* 2. p. 444. Rocky hill-tops, between the Upper Guadalupe and the Pierdenales, and in open Post-Oak woods. October.

446. LERIA NUTANS, *DC. Prodr.* 7. p. 42. Cedar woods, in rocky soil, New Braunfels. March.

447. APOGON GRACILIS, *DC.!* *Prodr.* 7. p. 78. In patches, on high, rocky prairies, New Braunfels. April. — Larger in all its parts than the ordinary *A. humilis*, and perhaps to be distinguished from it.

448 (& 650). PINAROPAPPUS ROSEUS, *Less. Syn.* p. 143; *DC. Prodr.* 5. p. 99. Troximon Rœmerianum, *Scheele in Linnæa*, 22. p. 165. High, rocky prairies, between Bexar and New Braunfels. April. Ligulæ white, a little reddish on the back. Roots penetrating very deeply.

(651.) LYGOESMIA APHYLLA β . TEXANA, *Torr. & Gray, Fl.* 2. p. 485. Calcareous soil, New Braunfels. May. — It often bears a tuber at the apex of the long root. The marginal achenia are more or less attenuated upwards, as is also the case in the Florida plant.

* * * No. 337, "*Linum Boottii* γ . *rupestre*, p. 155, is certainly a distinct species, as Dr. Engelmann had stated. It may be characterized as follows: —

337. LINUM RUPESTRE (*Engelm. ined.*): perenne, glaberrimum; caulibus e radice lignescente plurimis strictis gracilibus (1–2-pedalibus) striato-angulatis superne corymbosopaniculatis; foliis lineari-subulatis mucronulatis; glandulis stipularibus conspicuis post lapsum foliorum persistentibus; pedicellis calyce subbrevioribus; sepalis ovatis cuspidato-acuminatis margine glanduloso-ciliatis petalis flavis multoties brevioribus; filamentis sterilibus dentibusque plane nullis; stylis a basi discretis; capsula ovato-globosa calycem æquantibus, loculis bilocellatis. — Growing from the crevices of naked rocks, New Braunfels, also gathered at Comanche Spring,

July, 1849, in fruit. The leaves fall away early from the fructiferous plant, leaving the conspicuous stipular glands. Petals one third of an inch long. Capsule scarcely over a line in diameter.

The collection of 1849 furnishes an undescribed *Passiflora*, viz.: —

PASSIFLORA AFFINIS (*Engelm. Mss.*): “herbacea, scandens, elata, glabra; foliis trilobis subtus glaucis petiolisque eglandulosis, inferioribus subcordatis, superioribus basi subacutis, lobis subæqualibus obovatis obtusis setaceo-mucronatis integris; stipulis setaceis; pedunculis binis petiolum æquantibus vel superantibus 3-bracteatis, cirrho intermedio elongato simplici; petalis calycis lobis obtusis brevioribus et angustioribus (flavescentibus); baccis (cæruleo-atris) stipitem æquantibus. — Comanche Spring, climbing high over trees, in shady places. August–September. — Near *P. lutea* in aspect; from which it is distinguished by the bracteate peduncles, the deeply lobed leaves, the larger flowers, smaller seeds, &c. Lower leaves 3 inches long, and 4 wide, less deeply lobed than the upper, which are deeply divided. Petioles 4–12 lines long. Peduncles 12–15 lines long. Bracts 3, rarely 2, subulate, oblanceolate, or obovate, mucronate, often distant. Flowers 16 lines in diameter; the fimbriæ as long as sepals. Stipe half an inch in length, longer in proportion than in any other of our species. Berry of the same diameter. Seeds ovate, mucronate, transversely rugose, smaller and more turgid than in *P. lutea*. — De Candolle’s division of the genus, which would separate this species from *P. lutea* on account of the bracts, must be erroneous; moreover, *P. lutea* has not “perigonium s. calycem 5-lobum, but 10-lobum, as well as our species.” — *Engelm.*

[To be continued.]

The following brief account of the region in which the present collection of plants was made, drawn up by Dr. Engelmann as a preface to this article, having been received too late to take its proper place, is here subjoined.

“In November, 1844, Mr. Lindheimer left the neighborhood of the Brazos River, where he had made his collections in 1843 and 1844, and reached in January, 1845, the shores of the Matagorda Bay. In this and the following month he collected on the lower Guadalupe. From thence he went up this river about one hundred miles. Here, where the Comale Creek empties into the Guadalupe, the Association of German emigrants, with whom he had for the present joined his fortunes, selected a place for settlement, and laid the foundation of New Braunfels, now a flourishing town, and the county seat of Comale county.

“The year 1845 was spent in exploring the country and making excursions in the mountainous region to the west and northwest, at that time very insecure, being the haunts of wild Indian tribes.

“In the following year, 1846, Mr. Lindheimer made large collections in the interesting country about New Braunfels, at the same time giving much of his time and attention to the affairs of the colony.

“The explorations of the year 1847 were extended northwest to the country watered by the Pierdenales River, where another German settlement, Friedrichsburg (or Frederiksburg), had been founded. Collections were made partly here and partly near New Braunfels. Late in the fall an excursion in a northern direction into the granitic region of the Liano river furnished some interesting plants not observed before.

“The year 1848 was spent principally on the Liano, where several new German settlements had been formed. But the country appeared to be less rich in botanical treasures than had been expected; the burning sun of the summer months had almost destroyed the vegetation on the granitic soil, not refreshed for months by any rains. The Comanches, Weckos,

Tonkeways, and other Indian tribes of the west of Texas, became troublesome, and the frontier settlements had to be abandoned.

“The spring of 1849 found Mr. Lindheimer farther south, at Comanche Spring, one of the headwaters of San Antonio River. He has now (in the spring of 1850) returned to New Braunfels, where he intends again to go over the as yet insufficiently explored country, the most diversified and richest in botanical treasures as yet seen by him in Texas.

“The collections now distributed comprise those made in 1845 and 1846 (fascicle III) and 1847 and 1848 (fascicle IV).

“I proceed now to give a short geographical and topographical sketch of the country explored by Mr. Lindheimer.

“Matagorda Bay, with its numerous branches, receives to the northeast the Colorado, one of the largest rivers of Texas. Southwest of the Colorado the smaller Guadaloupe River empties into the same bay after receiving not far from its mouth its southern branch, the San Antonio River. The headwaters of these rivers, together with the southern branches of the upper Colorado, drain the country investigated by Mr. Lindheimer since 1845.

“The coast of the bay itself forms a level saline plain, sandy with comminuted shells. *Cakile*, *Oenothera Drummondii*, and *Teucrium Cubense* are characteristic plants: a little farther off are found *Berberis trifoliolata*, *Acacia Farnesiana*, a shrubby *Erythrina*, groves of *Sophora speciosa*, *Condalia*, some large *Yuccas*, and large *Opuntias* with humbler *Cactaceæ* beneath them.

“Some miles higher up the rivers, on clayey soil, solitary Elms and Palm trees are seen; the prairies have a stiff, black soil thickly matted with grass. The prevalent tree now becomes the Live Oak along the rivers, as well as in small groves on the prairies: higher up on the rivers the Water Oak and the Spanish Oak (*Q. falcata*) are found mixed with the Live

Oak. Swampy places are often densely covered with *Marsilea macropoda*, like fields of clover.

“Ten to twenty miles from the coast the country rises into the “rolling prairies.” Along the rivers *Quercus macrocarpa*, *Taxodium distichum*, and *Carya olivæformis* constitute large forests of vigorous growth. The groves of the prairies are principally formed by *Sophora speciosa*, *Condalia obovata*, and *Diospyros Texana*. The prairies themselves are richly studded by flowers, among which the blue and fragrant *Lupinus Texensis* and different species of red and yellow *Castillejas* are most conspicuous.

“About one hundred miles from the coast the country becomes hilly; conglomerate rocks are frequently seen; the streams are more rapid and clear and often expose horizontal strata of cretaceous rocks. Elm and Cypress are the principal trees along the rivers; Sycamores, Linden, and Hackberry are sparsely mixed with them. Many curious shrubs, among them the *Ungnadia*, are found in these river-forests. Here, also, the Muskit trees (*Algarobia*) make their first appearance, indicating the region of the Arborescent *Mimoseæ*; they form open woods, where the level ground, often overflowed in the rainy season, brings forth abundance of the thin and wiry but nutritious “Muskit grasses” (*Aristida*, *Atheropogon*, and others). Many other interesting plants are found in these “Muskit-flats.”

“In this region, and at the base of the first plateau, are located the towns of San Antonio, New Braunfels, and Austin, in a delightful climate, where snow or ice are rarely seen, and where the summer heat, tempered by the sea-breezes, never becomes uncomfortable. The spring, which at the coast sets in in January and early February, commences here a month or six weeks later. During the summer the weather is usually dry, and the vegetation languishes, but the rains of the latter part of August and September soon cause the whole country again to be clothed in fresh verdure.

Many plants then bloom a second time ; some, indeed, in this fertile climate, bloom oftener than that, almost after every period of rains.

“ A short distance north of this region, steep and sterile declivities, covered by loose rocks, rise to the first plateau, just mentioned. The high plains which are now reached are mostly sterile and stony, and often large faces of naked rocks are exposed. Many interesting plants mentioned in this catalogue, are peculiar to these plains: the smaller *Cactaceæ*, *Echinocactus setispinus*, *Cereus cæspitosus*, several *Mammillariæ*, and prostrate *Opuntia* grow here ; different species of *Yucca* are common ; the curious and stately *Dasyliion* is here first met with. The trees of this region are Elms and Cedar among the rocks, and Cedar again, finely developed, along the banks of the streams, where *Cercis occidentalis*, the shrubby Red Bud, forms thickets. *Juglans fruticosa* and *Morus parvifolia* are here found ; the Live Oak dwindles down to a shrub ; and low bushes of *Vitis rupestris*, the mountain grape, cover large tracts of these plains.

“ Twenty to thirty miles farther northwest the country rises again and becomes more hilly, and regular conic or pyramidal elevations, often showing the horizontal strata of the cretaceous limestone exposed in naked terraces, rise one behind the other, producing many peculiar plants. The valleys between them are often wide, with a thin soil, covered with grass and often with sparse Post Oaks ; or they are narrower, without any timber, but more fertile. The springs are here numerous and beautifully limpid, of a temperature of about 67 or 68 degrees ; the streams clear and rapid. The beds of the larger watercourses are often entirely dry in summer, leaving a wide, stony, or pebbly bed or naked rocks, abounding with interesting plants. The banks of the deeper streams are thickly covered with stately Cypress trees.

“ A few miles north of the Pierdenales the first outlier of the granitic formation is seen, which is found extensively developed on the Liano. The vegetation here begins to show

analogies to that of New Mexico. Here the winters are pretty cold, the springs late, the summers excessively hot, the soil generally thin, and therefore the prospects of the settlers unfavorable.

“I add a few details of localities and distances, which may not be found on the common maps.

“Green Lake and Caritas River are in the low lands near Matagorda Bay. Victoria is a town a little higher up on the lower Guadalupe. New Braunfels on the Comale Creek and Guadalupe River, is about one hundred miles to the northwest of the Bay, twenty-five miles northeast of San Antonio, and forty-five miles southwest of Austin, the present capital of Texas. The road from New Braunfels to San Antonio crosses the Cibolo, one of the confluent of San Antonio River, which runs in a wide and pebbly, and often dry bed. The Salado, one of the heads of which is the often-mentioned Comanche Spring, is another branch of San Antonio river, and such, farther south, are the Leona and the Medina.

“In going west from New Braunfels we reach, fifty-five miles from that town, the upper waters of the Guadalupe, the so-called Guadalupe crossings on the Pinto-trail. Several small streams in this neighborhood, Spring Creek, Wasp Creek, Three Creeks, and Sabinas (or Cypress Creek) are often mentioned as localities of different plants.

“North of this the road crosses several high ridges, (where, among other plants, *Guajacum angustifolium*, and in deep, clear ponds *Chara translucens*, were discovered), and reaches, sixty miles from the Guadalupe, the Pierdenales, one of the branches of Colorado River. The town of Friedrichsburg is built near the Pierdenales in a rather barren, sandy region, thinly scattered with Post Oaks.

“About thirty-five miles north of this the granitic region of the Llano or Llano is reached. The San Saba runs thirty miles farther north.

“The Flora of the country east of the Brazos River bears

considerable resemblance to that of the southern United States. But south of the Brazos, and still more south of the Colorado, the character of the vegetation changes; it assumes the peculiarity of the flora of the Rio Grande valley, which I have tried to characterize in Wislizenus's Report. The flora of the Rio Grande connects the North American with the Mexican flora, and has also many peculiar plants of its own, some of which have for the first time been distributed in Lindheimer's collections: such are the interesting *Rutosma*, the only American *Rutacea* known; *Galphimia linifolia*, the most northern *Malpighiaceæ*; several shrubby *Mimoseæ*; an ever-green *Rhus*; *Sophora speciosa*; the *Eysenhardtia*; a number of *Nyctaginaceæ*; the *Dasyllirion*, and many others enumerated in this catalogue. The ligneous plants become shrubby and often thorny, and here the chaparals, so famous in northern Mexico, make their first appearance.

“Towards the northwest the granitic soil produces a number of plants, which indicate a connection with the flora of New Mexico, and again with that of our western plains.

“In the neighborhood of New Braunfels the effects of cultivation on the distribution of plants are already apparent. *Helianthus lenticularis*, *Verbesina Virginica*, *Croton ellipticum*, *Nycterium lobatum*, different *Cenopodiaceæ* and *Amaranthaceæ* are becoming very common in cultivated places; but others, *Digitaria sanguinalis*, for example, so common in eastern Texas, have not yet made their appearance. In Cedar woods *Leria nutans*, in damp bottom woods *Dicliptera brachiata*, on dry prairies the small blue *Evolvulus*, are getting much more abundant; while *Pinaropappus roseus*, *Fedia stenocarpa* and others are much rarer than they used to be in the first years of the settlement of the country.

“In the catalogue of the collections of 1843 and 1844,

mention is several times made of "deserted ant-hills." Further investigation has shown that these hills are formed by loose earth brought by these ants out of their subterranean excavations. These consist of oblique tubes, some eight or nine inches wide, others only half an inch in diameter; they sometimes reach a depth of thirty or forty feet. In the greatest depth are their granaries, containing often many bushels, and it is said, even wagon-loads, of corn and other grain. These ants are also common about New Braunfels, and this or another species has occasionally been found to be quite destructive to Mr. Lindheimer's collections."

G. ENGELMANN.

ERRATA.

Page 148, line 17 for "brevioribus" read breviores.

" " line 18, for "subæqualibus aut longioribus" read subæquali aut longiore.

" 153, line 3, for "piloso" read folioso.

" " line 18, for "stigma" read stigmata.

" 155, line 7 from bottom, for "glandular, hairy" read glandular-hairy.

" " line 11 " " for "axillæ" read axillas.

" 158, line 10 " " for "TEXANA" read TEXANUM.

" " lines 2 & 4 " for "foliis" read foliolis.

" 160, line 22, for "M. WRIGHTII" read MALVASTRUM WRIGHTII.

" 161, line 21, for "A. TEXENSE" read ABUTILON TEXENSE.

" 163, line 8 from bottom, for "pedicellas solitarias s. fasciculatas" read pedicellos solitarios s. fasciculatos.

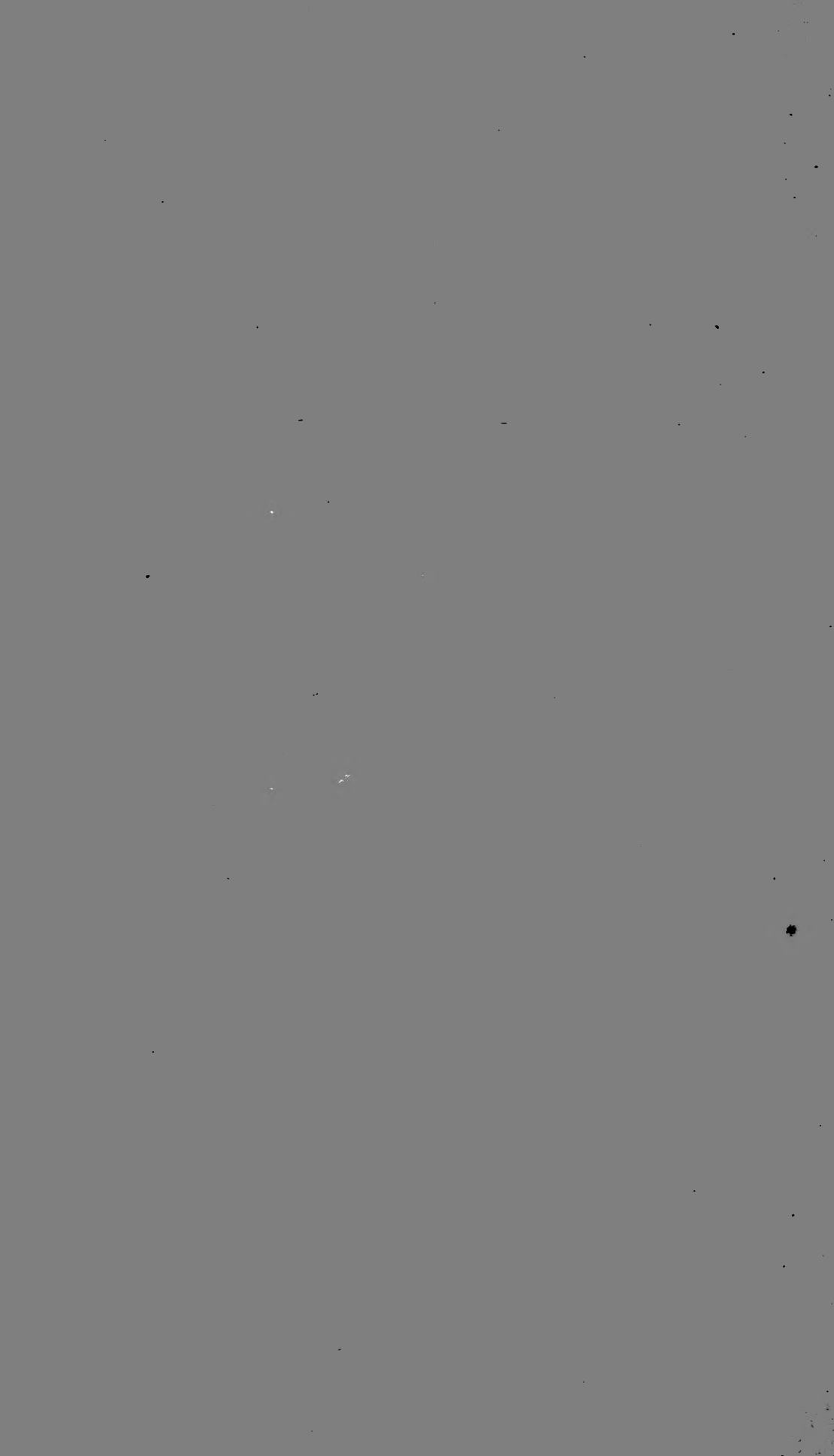
" 174, line 10 from bottom, for "squamosis" read squarrosis.

" 177, line 6 " " for "tomento" read lomento.

" 179, line 13 " " for "24 - 30-juga" read 24 - 30-foliolata.







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